# SEALCOATING

## A Preventative Maintenance Treatment

### Introduction

Sealcoating is a preventative maintenance treatment designed to preserve asphalt and spray seal pavements in an as new condition for as long as possible and thereby reduce the need for expensive rehabilitation and reconstruction. Sealcoating treatments are designed to seal the pavement surface against the intrusion of air and water, thereby slowing the oxidation process.

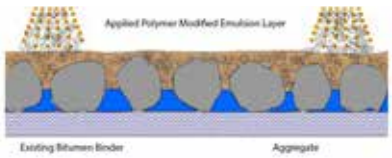
### Material

SealCoating involves the application of a polymer-modified bitumen emulsion containing specially graded aggregates, fillers, latex, rubber and pigment adjusters, with sand and water being post added on site prior to application. During the application process the macro texture of the initial pavement is filled with the emulsion and fine sand to the point of oversaturation covering the exposed aggregates in the process. During the curing phase separation occurs between the filled emulsion and water resulting in a gradual reduction in layer thickness. After the water has vaporized the residual SealCoat layer remains almost level with the top of the aggregate after curing has ended.

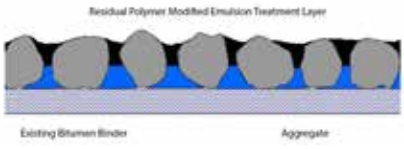
### Application Process

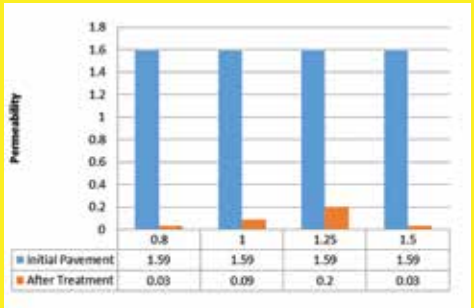
Custom built sprayers with larger nozzles than conventional bitumen sprayers, specialist pumps and mixing paddles help to keep the material in suspension. Being an emulsion it is not heated but applied at ambient temperature. Advantages over conventional treatments include the speed of application with an average shift spraying over 6,000m2 in urban streets and a fast drying time of between 30 mins and 2 hours. Disadvantages include no shape correction and a relatively short life span of about 5 years between applications. The finished treatment provides a rich black colour that seals and extends the pavement life at a low cost.

**SealCoat Treatment Process**




**Cured SealCoat Conditions**




PENDULUM SKID TEST RESULTS

Street Name: Delong Street, Acacia Ridge

| Sample No | App Rate | Skid Resistance Surface Texture | Skid Resistance Test Surface Mean BPN |
|---|---|---|---|
| 1 | 0.5 | Average | 75 |
| 2 | 0.7 | Average | 79 |
| 3 | 0.8 | Average | 76 |
| 4 | 1 | Average | 81 |
| Initial Surface Texture: | | Average | 55 |

Street Name: Fergan Street, Acacia Ridge

| Sample No | App Rate | Skid Resistance Surface Texture | Skid Resistance Test Surface Mean BPN |
|---|---|---|---|
| 1 | 0.5 | Course | 81 |
| 2 | 0.7 | Course | 81 |
| 3 | 0.8 | Course | 78 |
| 4 | 1 | Course | 81 |
| Initial Surface Texture: | | Course | 55 |

Street Name: Gemstone Crescent, Acacia Ridge

| Sample No | App Rate | Skid Resistance Surface Texture | Skid Resistance Test Surface Mean BPN |
|---|---|---|---|
| 1 | 0.8 + 0.7 | Course | 72 |
| 2 | 1 | Course | 78 |
| 3 | 1.25 | Course | 83 |
| 4 | 0.8 | Course | 78 |
| Initial Surface Texture: | | Course | 54 |

Street Name: Gregory Street, Acacia Ridge

| Sample No | App Rate | Skid Resistance Surface Texture | Skid Resistance Test Surface Mean BPN |
|---|---|---|---|
| 1 | 0.7 + 0.8 | Very Course | 84 |
| 2 | 1 | Very Course | 84 |
| 3 | 1.25 | Very Course | 84 |
| 4 | 0.8 | Very Course | 79 |
| Initial Surface Texture: | | Very Course | 75 |

### Results / Testing

Current testing includes permeability and skid resistance with results showing the permeability level reduces and an increase in skid resistance values across all treated pavements.

## Conclusion

The surface of flexible asphalt pavements designed for a 20 year life commonly have a functional life of between 12-15 years between major maintenance treatments, however a mid-life surface treatment of SealCoat will help to impede the aging process and potentially delay the timing of major maintenance treatments.

After an application the pavements skid resistance is improved and permeability decreased.