LDEG Forum

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

First Coat Seals

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

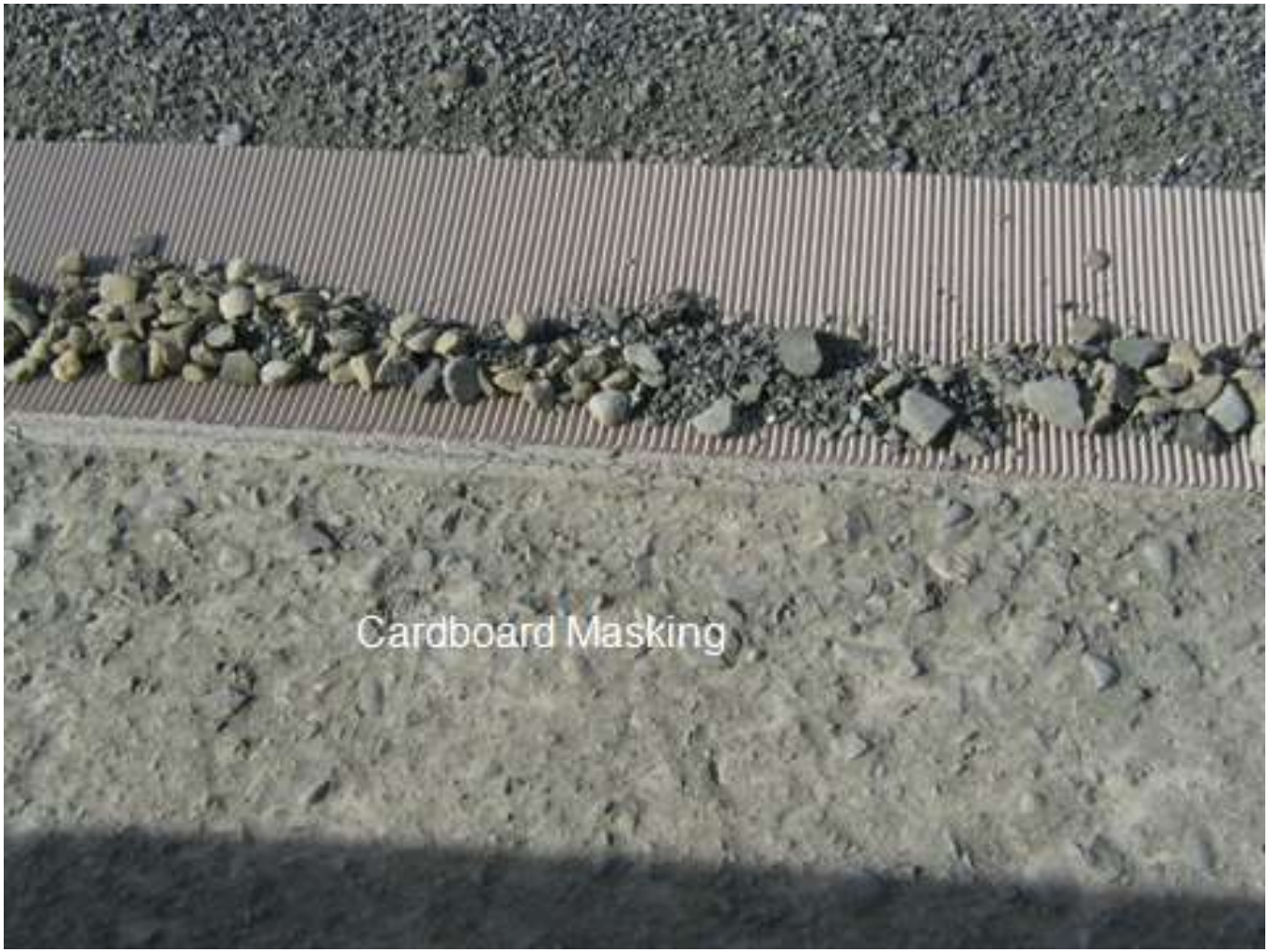
Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing



Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Subdivision Surfacing

Specification – Quality Control Hold Points

- Weed spraying
- Pavement Testing
- Profile Check
- Seal Design and Construction Plan
- Street Furniture Protection

Sealing Specification

NZTA P/3

- 1970's Method Specification
- Engineer is responsible for seal design
- Shall be180/200 base binder
- Hot Cut Back – Kerosene and Adhesion Agent
- Engineer handover
- Protection of Road Furniture
- Shade Air not less than 10°C

Subdivision Surfacing

NZTA P29 DRAFT PILOT: 2012

DRAFT PILOT PERFORMANCE BASED SPECIFICATION FOR FIRST COAT SEALS

PILOT

Subdivision Surfacing

Technical requirements

This specification is for use where the chipseal is designed in accordance with the **principles of the text book** ***Chipsealing in New Zealand*** and applied to a **site acceptable for first coat sealing**.

This specification must be **read in conjunction** with NZTA **B2** for unbound granular pavement and NZTA **B5** for modified granular pavement. **Preseal requirements in the above two specifications must be adhered to** ensure acceptable basecourse preparation prior to design and application of first coat seal.

Subdivision Surfacing

Technical requirements

First coat sealing is to be programmed for **completion between 1 September and 31 April**. Where, for any reason, the completion of the first coat seal extends beyond this period, seal design adjustments may be required, in consultation with the Engineer.

Subdivision Surfacing

Acceptance of Treatment

The Contractor shall inspect each site following completion of basecourse and consider the factors listed in items 6.1 to 6.3 below.

6.1 Traffic Stress

6.2 Contract Timing

6.3 Acceptability of the Surface

It is the **Contractor's responsibility** to ensure that the **site's surface is acceptable** for the application of the agreed first coat seal.

Subdivision Surfacing

Part of
6.2 Contract Timing

Says

For either of the above cases, **where the** first coat **seal does not meet the requirements** of section 10 or the agreed alternative performance criteria **the Contractor shall fully remove and replace the first coat seal at no cost to the Client.**

Section 10 is Performance Requirements

Subdivision Surfacing

performance requirements

If at the end of the defects liability period the first coat **seal does not meet** the specified or agreed alternative **performance requirements** the **Contractor shall fully remove, replace and maintain** the first coat seal until a second coat has been applied **at no cost to the Client**

Subdivision Surfacing

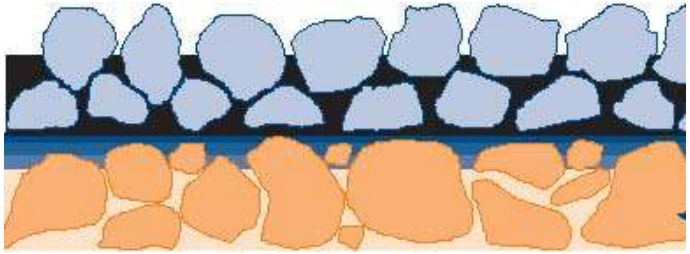
It is the **Contractor's responsibility to maintain** the seal in accordance with the requirements of this specification in a safe condition from the construction date **until final acceptance by the Engineer.**

Subdivision Surfacing

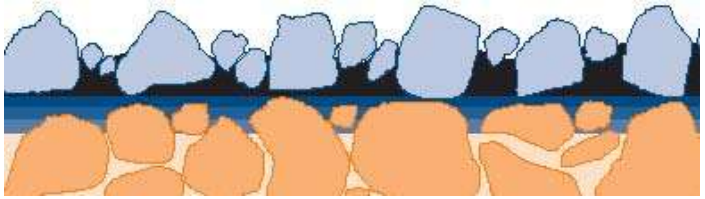
If at any time during the maintenance period **repairs** are required over an area **greater than 10%** of the area of the section (as defined in 13.1) then the proposed repair technique and **alternative performance criteria and defects liability** period shall be agreed with the Engineer.

Any **areas repaired more than nine months** after construction **or within 3 months** from the **end of the defects** liability **period** (whichever is the least) at the discretion of the Engineer, may be **subjected to a further defects liability period.**

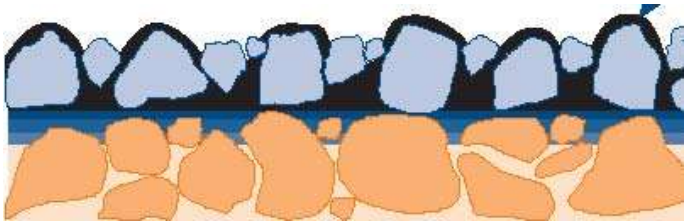
Single coat



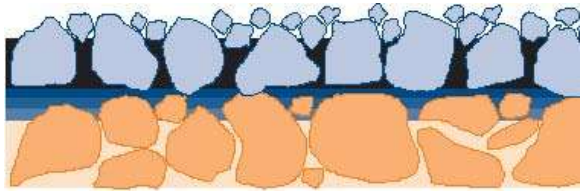
Racked in



Two Coat



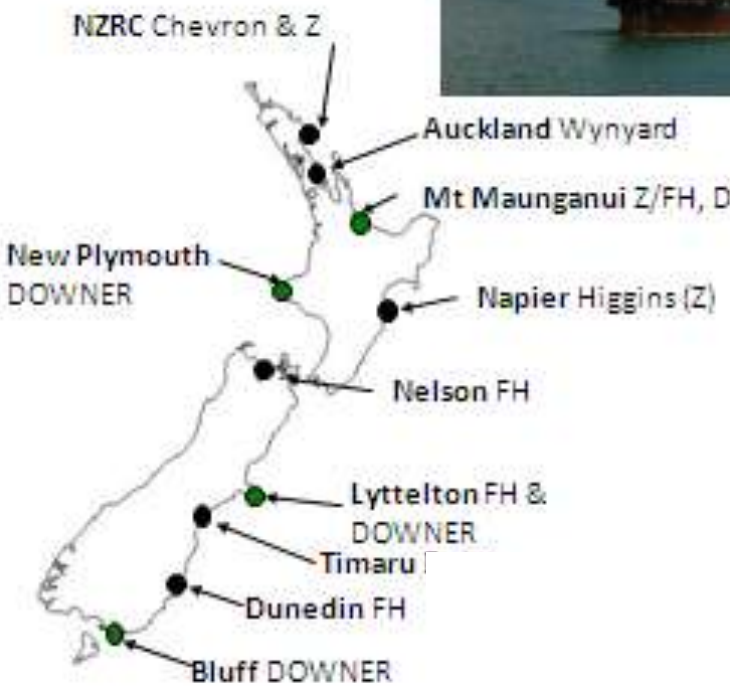
Dry Lock



Bitumen

- The NZ refinery at Marsden Point supplies approximately 125,000 tonnes of bitumen annually (**Domestic Supply** through Chevron, Z Energy)

- The NZ **short fall** of bitumen is approximately **40,000 tonnes** annually which has to be **imported**


NZRC Chevron & Z
Auckland Wynyard
Mt Maunganui Z/FH, DOWNER
New Plymouth
DOWNER
Napier Higgins (Z)
Nelson FH
Lyttelton FH &
DOWNER
Timaru
Dunedin FH
Bluff DOWNER

- **Different Penetration grades**
  <u>180/200</u>
  130/150
  80/100
  60/70
  <u>40/50</u>

Binder

Is the mixture of bitumen and spraying additives.

1. **Kerosene**
2. **Diesel** or AGO
3. **Polymer**
4. **Adhesion Agents**

Downer

Viscosity

The '**Viscosity'** of a liquid is it's **resistance to flow.**

For bitumen binders, we need to reduce it's viscosity so we can:

- pump it.
- spray it.

We **reduce** the **viscosity** by:

- Heating 170 C

OR

- Emulsifying

Downer

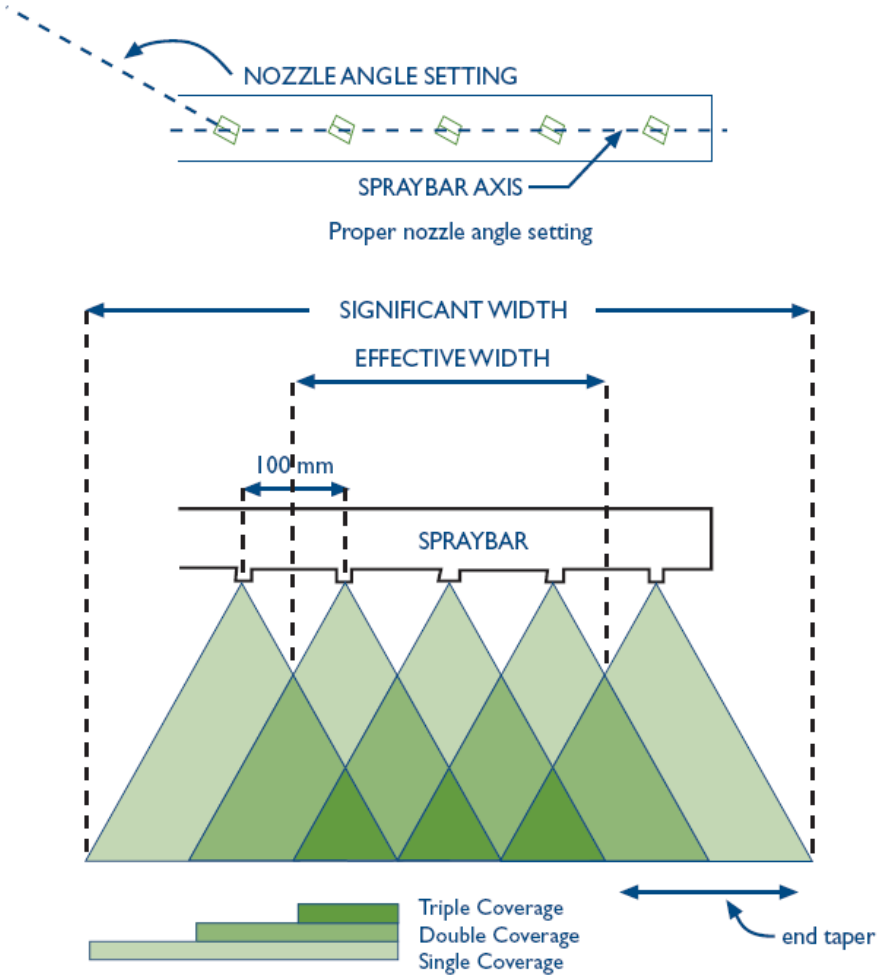
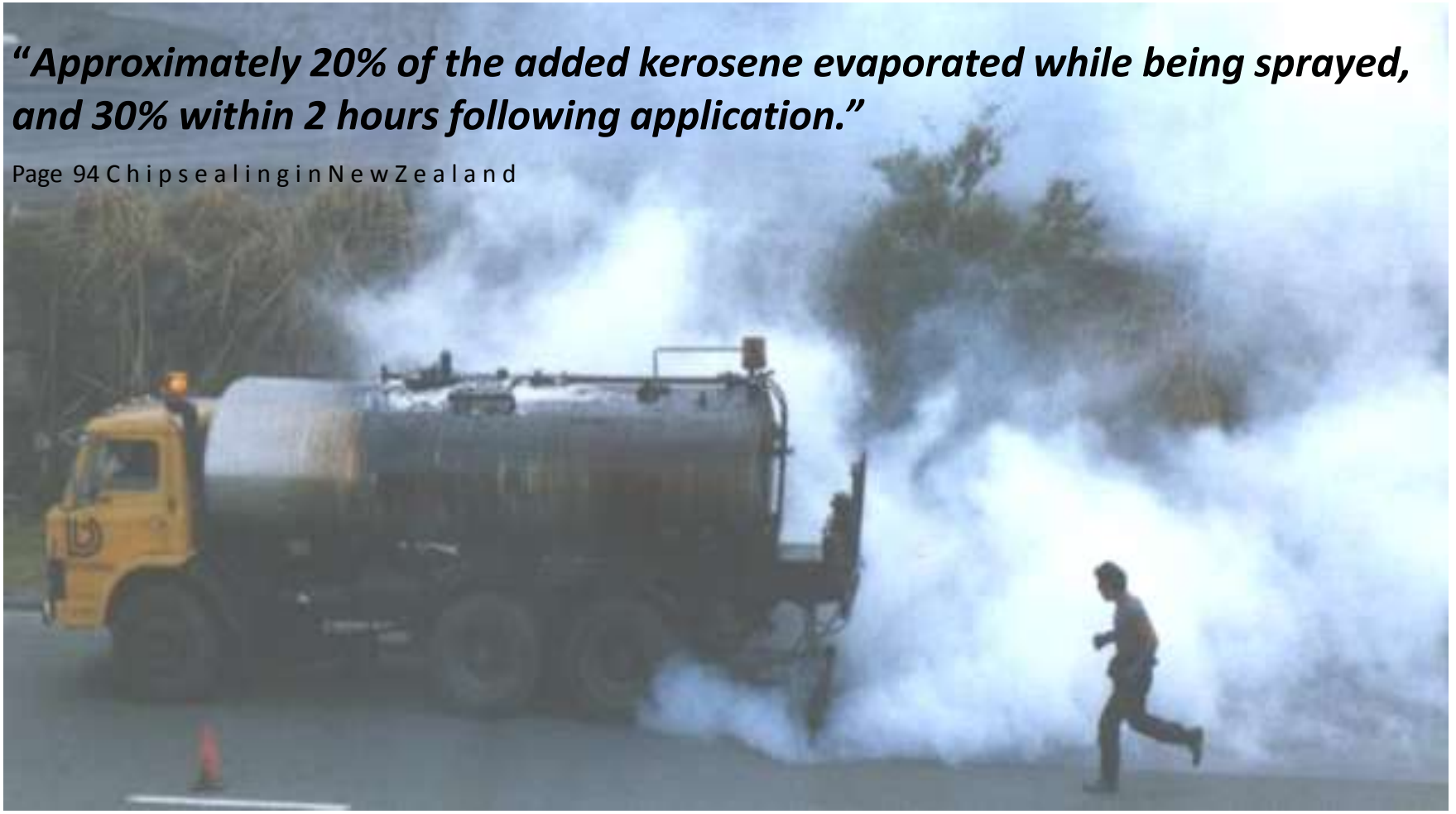


Figure 10-4 Spray fans overlap to give triple coverage of binder on the road.

Downer

Environmental / Sustainability



Downer

- **ADHESION**: bituminous binder, **sticks to** the **surface** of a solid body, e.g. chip. It arises through **intermolecular attraction between** the contract **surfaces.**

- **COHESION**: the ability of a material to **resist**, **by** means of **internal forces**, the **separation of** its constituent **particles**

Downer