



Ultra-Thin Asphalts: A Sustainable Approach to Constructing Safe Surfacing

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SAFE AND SUSTAINABLE
ROAD SURFACES

- Highway surfacings are required to provide a safe and comfortable driving experience:
 - Safety is a function of:
 - Megatexture and drainage
 - Macrotexture
 - Microtexture and skid resistance
 - Driving comfort is derived from
 - Megatexture and ride
 - Macrotexture and noise abatement

The Perfect Surfacing Would Be

- Smooth: able to correct megatexture faults;
- Low Noise;
- Textured for skid resistance;
- Manufactured using polish-resistant, high friction materials;
- Quick and easy to place;
- Durable;
- Recyclable;
- Economic.

And the answer is....

- Ultra-thin asphalts:
 - Can be used for minor shape correction (or in conjunction with a prelevelling shape correcting layer);
 - Can be designed to provide macrotexture, with noise absorption and skid resistance;
 - Can be manufactured with polish resistant crushed rock aggregates or recycled materials;
 - Relatively quick to place;
 - Resistant to traffic stresses;

- Developed in the Waikato region in the late 1990s
- Used on many sites in the North and South Islands
- Provides a textured, low noise, durable and pleasing road surface
- High cost per tonne, but laid very thin (15 – 25 mm)
- Requires specialised manufacturing plant.

- Uses non-traditional particle size distributions;
- Binder is a designed, multi-component material;
- Aggregates:
 - Crushed rock, or;
 - Glenbrook Melter Aggregate (GMA);
- Thin lifts minimise use of non-renewable resources, and;
- Can be milled off, replaced and millings recycled as RAP;
- Texture depths over 1 mm.



SH/60 Takaka – April 2007

19 4 2007



SH/6 Rai Saddle – July 2007

19 7 2007



SH/6 Rai Saddle – July 2007

19 7 2007



SH/60 Takaka Hill Eureka Bend: September 2015



SH/60 Takaka Hill Eureka Bend: September 2015



SH/60 Takaka Hill: Eureka Bend May 2016





SH/6 Hope Saddle May 2016



SH/6 Hope Saddle May 2016



SH/6 Hope Saddle March 2017, Glenbrook Melter Aggregate



SH/6 Hope Saddle April 2017, Glenbrook Melter Aggregate



- Ultra-thin asphalt surfacings can provide many pavement maintenance benefits:
 - Improved skid resistance;
 - Durable and quiet;
 - Relatively quick to place
 - Recyclable.
- Material cost is higher but reduced maintenance interventions provide economies
- Thin overlay can be milled off, recycled and replaced.