

Rehabilitation of Pavements



Summary

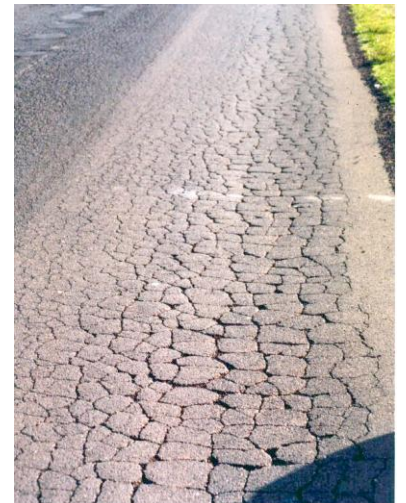
As an engineer working with VicRoads' Pavement Group in the 1980s and then as Team Leader—Pavement Design, Graham has investigated hundreds of pavements, both flexible and rigid for a wide variety of clients.

Rehabilitation design may range from being a highly diagnostic procedure to one requiring relatively straight-forward knowledge (to in-effect, reconstruct the pavement) such as—

- the loading expected to be sustained—type of vehicles and their masses;
- the strength of the subgrade or foundation; and
- the materials used to construct a (new) pavement and surface

—to the more complex (often the case) taking into consideration—

- the environment in which the pavement structure has been operating;
- behaviour of materials—soils, granular, bound materials such as asphalts and cemented materials and concrete;
- the inherent strength of the existing pavement; and
- an excellent knowledge of new surfacing-type treatments available.



Where existing materials are deficient in quality, rather than quantity (depth) the possibility of stabilisation to recycle the materials exists. In many cases, stabilisation is not the option, and if attempted, can usually make for poor long-term performance of the rehabilitation treatment.



Examples

Simple rehabilitation

A very simple rehabilitation, involving use of a re-surfacing technique is provided in [this sample report](#) [Rehabilitation report-basic].

Complex rehabilitation

A more complex report which involved strength testing using the FWD [Structural Evaluation using BB, FWD and PaSE] back analysis and stabilisation was provided for an industrial pavement [Industrial pavement].

Network Rehabilitation [Road rehabilitation strategy]

Most clients require a single street or section of a road to be considered, however at times networks of pavements require a strategy to be developed for budgetary and other reasons. With the aid of high-speed pavement condition data collection, many tens of kilometers may be 'inspected' and following inspection, schedules of works and works programs be developed.



Research

Graham has been involved in researching and developing key issues used in pavement rehabilitation including:

- Stabilisation [Stabilisation-specialty] using chemicals; cement, lime and supplementary cementitious binders and bitumen; and
- Thin surfacings [Thin surfacings-specialty] as these are placed thinly (less than 40 mm) they act very flexibly and can in many cases prolong the life of existing pavements without the need for major rehabilitation.