

## **Fracturing concrete pavement technology**

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### **ABSTRACT**

There are a large number of concrete pavements in Australia, particularly in New South Wales and Queensland, with many dating back to the first half of the 20th century.

These concrete pavements are still in use today, and since the time these pavements were constructed, we have seen an evolution in traffic volumes and the size of vehicles traveling on our roads.

There is a significant amount of these concrete pavements which are nearing the end of their intended design life. This means that we are on a fast-track to replace these old pavements within a short period of time, and the cost will be substantial.

With this in mind, we have identified that the rehabilitation of failed concrete pavements is possible using available, proven, concrete fracturing technology.

The concrete fracturing methods available are:

- crack and seat
- rubblisation
- break for removal.

This pavement technology has been utilised successfully since the 1990's, in the United States, Europe, Great Britain, Africa, India, Japan and China.

Pavement rehabilitation extends the service life of an existing pavement and/or improves its load-carrying capability through direct structural modification. These rehabilitations are designed to extend the life of the existing concrete pavement by restoring structural capacity through the elimination of cracking or by increasing pavement thickness to accommodate existing or anticipated traffic loads.

Once the existing pavement has been fractured, this pavement can be used as a sound structural base that can overlaid with a new concrete pavement. Concrete overlays can be used to improve surface characteristic issues, reduce noise, improve skid resistance and improve ride quality.

Alternatively, this process can be used to break the pavement for removal, providing an efficient breaking process to suit where the concrete pavement is broken to a size that meets the required removal, hauling and crushing needs. Typically, this breaking process is 8 times faster at breaking concrete than traditional methods.

Concrete Pavement Recycling (CPR) has secured Australia's first concrete fracturing machine to deliver this proven technology to our roads. CPR is a joint venture between NA Group and Downer Group.

The single largest benefit of concrete fracturing is that it allows us to transform concrete pavements with ride or other performance issues into a high-quality, non-moisture sensitive, stable platform for a new pavement surface at a fraction of the cost and time of reconstruction.

CPR - Breathing new life into pavements.

Let's get cracking!