

Towards achieving uniform density in granular layers

The performance of the various types of granular pavement layers (unbound, modified, bound) is highly dependent on the density that is achieved during construction. The Waka-Kotahi NZTA B-series specifications require the Contractor to achieve a uniform compaction of the granular layers. Several contracts now require that the Lot density acceptance is to be done in accordance with NZTA T/23: "Estimation of the density of compacted aggregate layers by direct transmission", which provides a procedure for determining the density of the various forms of granular layers by means of a nuclear densometer (NDM) in direct transmission (DT) mode. With this process of testing to various depths the density of the upper and lower densities can be estimated. This presentation provides some insights, using some pilot projects' results, of how uniform density through the depth of the layer can be achieved using a combination of a rationalised plateau density test and advanced compaction equipment technology.

The following topics will be covered:

- What is uniform compaction and how does this affect pavement performance
- Laboratory versus Plateau target density
- Compaction equipment types, technology and pavement response mapping
- Update of NZTA T/24 Specification – ratified approach after industry feedback
- B-Series and NZTA T/23 Specification