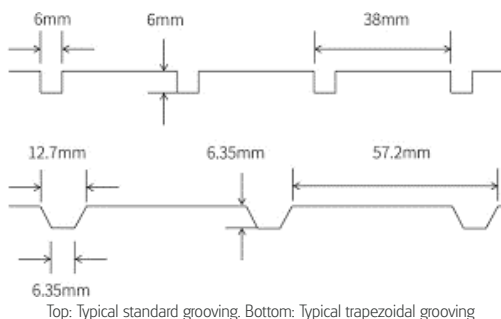




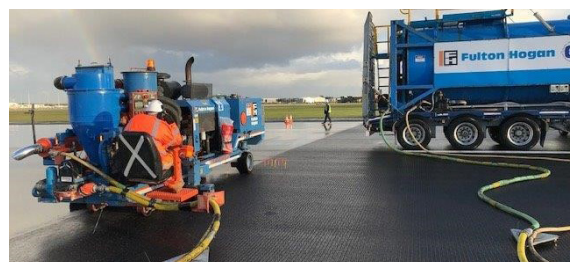
Runway Grooving

Grooving runway pavements provide a path for water to escape from under the tire of an aircraft as rapidly as possible to eliminate the potential for hydroplaning. It provides channels for water to escape, helping eliminate standing water.

The grooves are cut transversely to the direction of airplane landing and are usually continuous to dry pavement lines for the entire length of the runway. The two main methods used for runway grooving are conventional (standard) grooving, using a u-shape profile and trapezoid grooving, using a diamond-shaped profile.



Fulton Hogan has developed an efficient, environmentally friendly process to groove runways in both, standard and trapezoidal grooving, utilising the latest available technology and methodology



Trapezoidal Grooving

Although standard square grooving has proven its effectiveness in practically eliminating hydroplaning accidents, there are potential areas of improvement for square grooves.

A trapezoidal groove is a different shaped groove to the standard (square) groove. It is wider at the top with wider spacing between each groove.

A trapezoidal groove is a much more efficient water carrying channel than a square groove resulting in better and faster runway drainage compared to regular grooves, and also results in greater structural integrity.

Trapezoidal grooves cause less tire wear which leads to less rubber build, and as a consequence, less rubber removal and longer pavement life.



Quality control: Fulton Hogan is testing the groove dimensions and alignment during grooving operations

Runway Grooving



Benefits

- Trapezoidal grooving provides better water dissipation (enhanced drainage capacity due to greater cross section area)
- Increased pavement life expectancy and improvement of the durability, integrity and longevity of the grooves due to the trapezoidal groove design (trapezoidal shaped grooves are less susceptible to damage from aircraft tyres and runway maintenance activities such as sweeping)
- Reduction of groove related distresses such as wear and tear of groove walls, groove closure, groove migration, groove collapse, and rubber deposits
- Reduction of risk of clogging up and FOD being caught in the grooves and reduction of frequency and need for rubber removal.

Environmentally friendly

Waste Material, Slurry recycling

Fulton Hogan has developed the first fully recycled system for slurry material, eliminating the environmental issues relating to Slurry Ponds.

How It Works

The grooving operation requires water to cool the blades for the cutting process. This water comes from a tank on the front of our trailer. The water is pumped to the grooving machine where spray vents evenly distribute the water to the cutting blades.

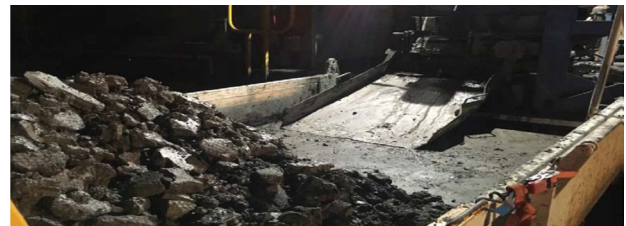


The cut asphalt forms a slurry material under the wet blades of the groover which is vacuumed up by the cyclone extraction system, leaving the pavement clean of any debris from the grooving process.

This slurry material is then pumped to the back of the recycling trailer into the slurry storage tank. This tank has a paddle system to prevent the solids settling out until the fluid can be pumped through the filter press.



The filter press takes out the solids from the fluid, allowing the cleaned water to be pumped back into the water feeder tank at the front of the trailer. The solids are then dropped down onto a conveyor and put into a small tipper truck that removes them from the runway to a client designated storage area.



Our priority is to reuse water. A normal grooving operation requires 8 litres of water per m², which, for example, requires 120,000 litres of water for 15,000m² of grooving.

We envisage that at least 80% of the water will be re-used in the grooving operation, reducing water use to approx. 24,000 litres.

The process still requires regular top up of fresh water but with our methodology, no recycled water needs to be dumped at the end of the project, we just reduce the fill up until the water is used up.

The filtered slurry blocks, which are removed, can be mixed back into asphalt millings to complete a full recycling operation. This allows for a cleaner, safer and more environmentally friendly service.



For further information please email airports@fultonhogan.com or contact your nearest Fulton Hogan office. www.fultonhogan.com/contact_us