Introduction
Research has demonstrated that the road based transport crash rate increases as the skid resistance of road surface decreases. This research compares the equilibrium skid resistance level of various natural and artificial surfacing aggregates including varying the aggregate chip size under laboratory based accelerated polishing and in response to changes in environmental conditions. Previous research has shown that wet skid resistance of chipseal surfaces is not only a function of the polishing resistance of the aggregate, but also of its size, shape and spacing.

Experimental Methodology
A laboratory experiment was designed at the University of Auckland (UoA) to simulate the in-field skid resistance performance of surfacing aggregates. The experiment required accelerated laboratory polishing, friction testing with a Dynamic Friction Tester (DFT) and surfacing samples to be constructed that were compatible with each other. The testing process and methodological steps are shown in Figure 1.

Results
The DFT (µ) friction results from a newly prepared surface sample (initial skid resistance) through accelerated polishing in hours for three geologically different aggregate samples (greywacke, basalt and an artificial electric arc furnace) are shown in Figure 2. Two of the materials (greywacke and basalt) were then tested with two different chip sizes (Grade 4 vs. Grade 6). The value at which the DFT (µ) levelled off for each aggregate sample is shown graphically and described as the polished Equilibrium Skid Resistance (ESR) level.

Experimental Methodology
A laboratory experiment was designed at the University of Auckland (UoA) to simulate the in-field skid resistance performance of surfacing aggregates. The experiment required accelerated laboratory polishing, friction testing with a Dynamic Friction Tester (DFT) and surfacing samples to be constructed that were compatible with each other. The testing process and methodological steps are shown in Figure 1.

Research Conclusions
1) The artificial Electric Arc Furnace aggregate (Grade 4) performed the best of the three geological materials and contaminants had very little effect
2) The Grade 4 greywacke and basalt aggregates performed very similarly at ESR level although the basalt had a much higher initial skid resistance
3) Both the greywacke and basalt aggregate demonstrated a significant improvement when a smaller Grade 6 aggregate chip was used in comparison to a Grade 6 chip (24% and 35% improvement respectively).