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## Evolution of grip at the Singapore F1 Grand-prix

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**Abstract** The Singapore F1 grand Prix has been held at the Marina Bay Street Circuit since 2008. It was Asia's first combined night race and street circuit. The qualifying average lap speed in 2018 was 118 mph around the streets of Marina Bay. This paper describes the work that goes into preparing the circuit by Singapore Grand Prix ready to be handed over for a F1 event. Criticism of the circuit resulted after the first running of the race. Pedestrianized parts of the circuit were dusty giving concern during the race. A programme of street cleaning was instigated to prevent dangerous dusty conditions. Since this a range of issues have been addressed i.e. masking the distractive effects of street markings, early life bitu-planning on resurfaced parts of the track to ensuring a smooth-running surface for cars travelling at very high speeds over multi-lane streets. This paper considers these issues with respect to their contribution to measured grip. It reports GripMap Method data measured using GripTester and micro GripTester devices. The evolution of grip is discussed as the circuit is prepared prior to the race and then handed over to F1 for the race weekend. The data shows how track surface preparation techniques such as high-pressure water treatment and high friction paint improve circuit grip levels. Compared to a typical racing circuit the paper shows how grip levels for a short life race event lasting just one week can be measured and related to circuit activities.

**Keywords:** racing circuits, grip, evolution