

Real urban bicycle braking performance measured

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ABSTRACT

Despite world-wide emphasis on a safer cycling infrastructure for cities, there has been relatively little debate on the braking performance of typical urban bicycles on the street. Braking standards for bicycles in different countries vary widely¹. The types of brake fitted to bicycles also vary widely, as do their effectiveness².

Some simple tests were performed on several urban bicycles having a variety of wheel sizes and with several quite-different braking systems, to determine deceleration achieved and stopping distance from speeds encountered in urban commuting. Measurements were obtained in both dry and wet conditions on normal asphalted city streets and bike lanes.

Instrumentation included a GPS-equipped video camera, steering-column mounted, and an accelerometer and speed sensor. A special microcontroller recording unit was designed, built and programmed by the author to collect supporting speed sensor data, giving distance, time and speed.

The experimental results may surprise some in the bicycling community with orthodox views.

Keywords: braking, measurements, urban bicycles.

REFERENCES

1. Christopher Morris, *Where the Rubber meets the Road*, ICSC 2013, Helmond, Netherlands.
2. D.G.Wilson, *Human Power* magazine vol. 53, Spring 2002, pages 10-18.