

Speed Necessary To Produce 50 Metre Skid Mark

I noticed an interesting search item that led the searcher to our Gorski Consulting website wherein the person searched for an answer to how quickly might a vehicle be travelling in order to produce a 50 metre (164 foot) long skid mark. I'm not trying to dodge the question but that really depends on the conditions and what you assume.

Assuming a typical passenger car on a level, dry asphalt pavement with a fully functioning braking system, and an emergency type of brake application, we might assume the co-efficient of friction between the pavement and tire might be in the range of 0.7 to 0.9, depending on things like ABS brakes availability. Using the slide-to-stop formulation discussed earlier in this NEWS section of the website it is a simple procedure to input this friction value and distance and get a speed value of about 94 to 107 km/h. That might seem quite simple if all the assumptions are correct, but the reality is more complicated.

What testing was done to determine the precise co-efficient of friction on the surface. Did the tester perform the test over the exact same conditions? For example if the test is performed in the normal wheel tracks of a lane you might get a different deceleration level than if the test is just slightly away from the normal travel path for obvious reasons.

Were all the wheels fully and equally effective during the braking process? How hard did that driver actually slam the brake pedal? Was the application performed by a 200 pound police officer while the actual driver was an elderly 90 pound female? Wouldn't you be concerned if the test was set up in that fashion?

How do you know the braking occurred over 50 metres? The skid mark may show most of the braking distance but are you sure there wasn't additional braking going on while the driver was evaluating what action he/she should take and braking was only marginal or moderate? No skid mark would be visible during this moderate braking distance. It does happen in real life you know. And so on and so on.

The bottom line is you can get a simple answer to this question very simply and be simply wrong.