

Experiment 7: Data Sheet

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Experiment Description Road Load and Rolling Resistance

Experiment Location I- 90 Service Rd - 27 mi west of Rapid City, SD

Road Surface Composition and Condition concrete - good, minimal cracking

Ambient Conditions

wind speed (km/hr)	0 (no wind)
wind direction(deg)	
barometric pressure (kPa)	100 kPa
air temperature (C)	22 C
road surface temperature (C)	23 C
air density (kg/m ³)	

Vehicle Description

Make	Ford
Model	Taurus
Year	2000
Odometer	138431
Empty Weight (kN)	

Tires

Manufacturer	<i>Firestone</i>
Description	<i>FR710</i>
Size	<i>P215/60R16</i>
Tread Depth	<i>new tires</i>

Tire Pressure

	recommended (kPa)	actual (kPa)
LF	<i>221 -234</i>	<i>234</i>
RF	<i>221 -234</i>	<i>234</i>
LR	<i>221 -234</i>	<i>227</i>
RR	<i>221 -234</i>	<i>221</i>

Vehicle Frontal Area (m²)

height (m)	<i>1.47 m</i>
width (m)	<i>1.85 m</i>
0.8h X w (m ²)	<i>2.18 m²</i>

Inertial Mass

front wheels (kg)	
rear wheels (kg)	
drive train (kg)	
total (kg)	
m_{rc} approximated = 0.03W	

Data (total time in seconds)

V(mph)	1	2*	3	4*	5	6*
70	0	0	0	0		
60	9.6	11.3	10.2	10.6		
50	23.2	26.4	25.3	25.7		
40	38.5	42.8	43.5	38.9		
30	54.3	63.2	62.4	60.8		
20	82.1	85.2	87.1	83.0		
10	106.4	112.2	110.4	111.2		

*opposite direction (returning