

# ISO 10521-1:2006-10 (E)

## Road vehicles - Road load - Part 1: Determination under reference atmospheric conditions

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
1	Scope .....	1
2	Normative references .....	1
3	Terms and definitions .....	1
4	Required overall measurement accuracy .....	2
5	Road-load measurement on road .....	3
5.1	Requirements for road test .....	3
5.1.1	Atmospheric conditions for road test .....	3
5.1.2	Test road .....	3
5.2	Preparation for road test .....	4
5.2.1	Vehicle preparation .....	4
5.2.2	Installation of instruments .....	4
5.2.3	Vehicle preconditioning .....	5
5.3	Measurement of total resistance by coastdown method .....	5
5.3.1	Multi-segment method .....	5
5.3.2	Average deceleration method .....	8
5.3.3	Direct regression method .....	10
5.4	Onboard-anemometer based coastdown method .....	11
5.4.1	Selection of speed range for road-load curve determination .....	12
5.4.2	Data collection .....	12
5.4.3	Vehicle coastdown .....	12
5.4.4	Determination of coefficients .....	12
5.4.5	Determination of total resistance .....	13
5.5	Measurement of running resistance by torquemeter method .....	13
5.5.1	Installation of torquemeter .....	13
5.5.2	Vehicle running and data sampling .....	13
5.5.3	Calculation of mean speed and mean torque .....	14
5.5.4	Running resistance curve determination .....	16
5.6	Correction to standard atmospheric conditions .....	16
5.6.1	Correction factors .....	16
5.6.2	Road-load curve correction .....	17
6	Road-load measurement by wind tunnel/chassis dynamometer .....	19
6.1	Aerodynamic drag measurement in wind tunnel .....	19
6.1.1	Requirements for wind tunnel .....	19
6.1.2	Testing procedure .....	19
6.1.3	Test result .....	19
6.2	Rolling resistance determination with chassis dynamometer .....	19
6.2.1	Testing device .....	19
6.2.2	Testing procedure .....	20
6.2.3	Test results .....	21
6.3	Total-resistance calculation .....	21
6.4	Total-resistance curve determination .....	22

<b>Annex A (informative) Examples of onboard-anemometer calibration procedure .....</b>	<b>23</b>
<b>Annex B (informative) Examples of dynamometer-measured rolling-resistance correction method .</b>	<b>26</b>