

Minimum energy performance technical specification for passenger tires



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Preface

This is the first edition of CSA SPE-115, *Minimum energy performance technical specification for passenger tires*.

CSA Group acknowledges that the development of this Technical Specification was made possible, in part, by the financial support of Natural Resources Canada.

This Technical Specification was prepared and reviewed by the Subcommittee on Tire Efficiency.

Notes:

- 1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
- 2) *Although the intended primary application of this Document is stated in its Scope, it is important to note that it remains the responsibility of the users of the document to judge its suitability for their particular purpose.*
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CSA SPE-115:21

Minimum energy performance technical specification for passenger tires

0 Introduction

0.1

The purpose of this Technical Specification is to provide requirements and recommendations for the performance of passenger tires with respect to rolling resistance and wet grip. Due to the global presence of many of the tire manufacturers and the variety of testing methods that are mandated by different countries and jurisdictions, methods for assessing rolling resistance and aligning test laboratories form an important part of this Technical Specification. Since there can be an inverse relationship between rolling resistance and wet grip, this Technical Specification requires minimum thresholds for both to ensure no degradation to tire safety as a consequence of improving rolling resistance. Compliance with this Technical Specification will allow users to demonstrate that the design of light vehicle tires takes into consideration, and is compatible with, the mitigations that might be required to reduce greenhouse gas (GHG) emissions from Canada's transportation sector in accordance with the Pan Canadian Framework for Clean Growth and Climate Change.

Users of this Technical Specification are reminded that additional and site-specific requirements might be specified by federal, provincial/territorial, municipal, or other authority, or by a project owner. This Technical Specification should not be considered a replacement for the requirements contained in any

- a) applicable federal or provincial/territorial statute;
- b) regulation, license, or permit issued pursuant to an applicable statute; or
- c) contract that an owner has with a contractor.

0.2

This Technical Specification has been prepared with the Pan Canadian Framework for Clean Growth and Climate Change in mind. Improving the energy efficiency of passenger vehicles and light trucks will support policy objectives in the Pan Canadian Framework for Clean Growth and Climate Change. Improving the energy efficiency of passenger cars is a key strategy because the more than 22 million light vehicles in Canada (including mainly passenger vehicles, pick-ups, sport utility vehicles, and minivans) account for about 12% of total greenhouse gas (GHG) emissions in Canada.

Improving replacement tire rolling resistance is one strategy to help Canada reduce these passenger vehicle GHG emissions. Natural Resources Canada (NRCan) estimated that reducing the rolling resistance of tires can improve fuel efficiency by about 1.4 to 1.6% (NRCan, 2018). NRCan further estimates this improvement could result in an estimated 718 000 ton reduction in GHG emissions and \$300 million in total consumer fuel cost savings annually and standards would play a key role in achieving these benefits. Another policy goal is the alignment with other markets, particularly the United States market and other global markets, when feasible.

The resulting requirements represent thresholds when the Technical Specification is fully implemented. During the regulatory process, it is anticipated that NRCan and Transport Canada will develop appropriate implementation strategies in consultation with the tire manufacturing industry.

While there are numerous excellent guidelines available to help the user in the low-carbon manufacturing of tires, no unified standard has yet been prepared in Canada to specifically address the contribution of tire energy efficiency to transportation sector GHG emissions. This Technical Specification is intended to rectify that lack.

1 Scope

1.1 General

The intent of this Technical Specification is to create an enforceable Technical Specification that will establish minimum energy efficiency and wet grip performance requirements for new and imported light-duty vehicle tires in Canada. The intent is to regulate energy efficiency under the *Energy Efficiency Act* under NRCan's jurisdiction and to regulate wet grip under the *Motor Vehicle Safety Act* under Transport Canada's jurisdiction.

1.2 Users

This Technical Specification is intended for use by

- a) regulatory agencies;
- b) tire manufacturers;
- c) original equipment (OE) vehicle manufacturers;
- d) testing facilities and laboratories; and
- e) tire importers/distributors.

1.3 Application

This Technical Specification applies to new pneumatic radial tires designed for use on light duty vehicles that were manufactured on or after January 1, 1975 (per CMVSS 139).

1.4 Exclusions

This Technical Specification does not apply to

- a) light truck (LT) tires and C-type tires;
- b) tires with a tread depth of 14.3 mm (18/32 in) or greater;
- c) tires with a speed symbol greater than V;
- d) motorcycle tires;
- e) special tires (ST) for trailers in highway service;
- f) tires for use on farm implements (FI) in agricultural service with intermittent highway use;
- g) tires with rim diameter of 8 in and below;
- h) temporary use spare tires;
- i) winter tires that are manufactured with studs;
- j) bias ply tires; and
- k) racing tires designed for competition use.

1.5 Terminology

In this Technical Specification, “shall” is used to express a requirement, i.e., a provision that the user shall satisfy in order to comply with the Technical Specification; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the Technical Specification.