



**CSA  
Group**

**D250-16**

# School buses



# Legal Notice for Standards

Canadian Standards Association (operating as “CSA Group”) develops standards through a consensus standards development process approved by the Standards Council of Canada. This process brings together volunteers representing varied viewpoints and interests to achieve consensus and develop a standard. Although CSA Group administers the process and establishes rules to promote fairness in achieving consensus, it does not independently test, evaluate, or verify the content of standards.

## Disclaimer and exclusion of liability

This document is provided without any representations, warranties, or conditions of any kind, express or implied, including, without limitation, implied warranties or conditions concerning this document’s fitness for a particular purpose or use, its merchantability, or its non-infringement of any third party’s intellectual property rights. CSA Group does not warrant the accuracy, completeness, or currency of any of the information published in this document. CSA Group makes no representations or warranties regarding this document’s compliance with any applicable statute, rule, or regulation.

IN NO EVENT SHALL CSA GROUP, ITS VOLUNTEERS, MEMBERS, SUBSIDIARIES, OR AFFILIATED COMPANIES, OR THEIR EMPLOYEES, DIRECTORS, OR OFFICERS, BE LIABLE FOR ANY DIRECT, INDIRECT, OR INCIDENTAL DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES, HOWSOEVER CAUSED, INCLUDING BUT NOT LIMITED TO SPECIAL OR CONSEQUENTIAL DAMAGES, LOST REVENUE, BUSINESS INTERRUPTION, LOST OR DAMAGED DATA, OR ANY OTHER COMMERCIAL OR ECONOMIC LOSS, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR ANY OTHER THEORY OF LIABILITY, ARISING OUT OF OR RESULTING FROM ACCESS TO OR POSSESSION OR USE OF THIS DOCUMENT, EVEN IF CSA GROUP HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES.

In publishing and making this document available, CSA Group is not undertaking to render professional or other services for or on behalf of any person or entity or to perform any duty owed by any person or entity to another person or entity. The information in this document is directed to those who have the appropriate degree of experience to use and apply its contents, and CSA Group accepts no responsibility whatsoever arising in any way from any and all use of or reliance on the information contained in this document.

CSA Group is a private not-for-profit company that publishes voluntary standards and related documents. CSA Group has no power, nor does it undertake, to enforce compliance with the contents of the standards or other documents it publishes.

## Intellectual property rights and ownership

As between CSA Group and the users of this document (whether it be in printed or electronic form), CSA Group is the owner, or the authorized licensee, of all works contained herein that are protected by copyright, all trade-marks (except as otherwise noted to the contrary), and all inventions and trade secrets that may be contained in this document, whether or not such inventions and trade secrets are protected by patents and applications for patents. Without limitation, the unauthorized use, modification, copying, or disclosure of this document may violate laws that protect CSA Group’s and/or others’ intellectual property and may give rise to a right in CSA Group and/or others to seek legal redress for such use, modification, copying, or disclosure. To the extent permitted by licence or by law, CSA Group reserves all intellectual property rights in this document.

## Patent rights

Attention is drawn to the possibility that some of the elements of this standard may be the subject of patent rights. CSA Group shall not be held responsible for identifying any or all such patent rights. Users of this standard are expressly advised that determination of the validity of any such patent rights is entirely their own responsibility.

## Authorized use of this document

This document is being provided by CSA Group for informational and non-commercial use only. The user of this document is authorized to do only the following:

If this document is in electronic form:

- load this document onto a computer for the sole purpose of reviewing it;
- search and browse this document; and
- print this document if it is in PDF format.

Limited copies of this document in print or paper form may be distributed only to persons who are authorized by CSA Group to have such copies, and only if this Legal Notice appears on each such copy.

In addition, users may not and may not permit others to

- alter this document in any way or remove this Legal Notice from the attached standard;
- sell this document without authorization from CSA Group; or
- make an electronic copy of this document.

If you do not agree with any of the terms and conditions contained in this Legal Notice, you may not load or use this document or make any copies of the contents hereof, and if you do make such copies, you are required to destroy them immediately. Use of this document constitutes your acceptance of the terms and conditions of this Legal Notice.



# *Standards Update Service*

*D250-16*

*May 2016*

**Title:** *School buses*

To register for e-mail notification about any updates to this publication

- go to [shop.csa.ca](http://shop.csa.ca)
- click on **CSA Update Service**

The **List ID** that you will need to register for updates to this publication is **2424359**.

If you require assistance, please e-mail [techsupport@csagroup.org](mailto:techsupport@csagroup.org) or call 416-747-2233.

Visit CSA Group's policy on privacy at [www.csagroup.org/legal](http://www.csagroup.org/legal) to find out how we protect your personal information.

# *D250-16*

## *School buses*



*™A trade-mark of the Canadian Standards Association, operating as “CSA Group”*

*Published in May 2016 by CSA Group  
A not-for-profit private sector organization  
178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3*

*To purchase standards and related publications, visit our Online Store at [shop.csa.ca](http://shop.csa.ca)  
or call toll-free 1-800-463-6727 or 416-747-4044.*

*ISBN 978-1-4883-0303-6*

*© 2016 CSA Group*

*All rights reserved. No part of this publication may be reproduced in any form whatsoever  
without the prior permission of the publisher.*

# Contents

Technical Committee on School Buses	5
Preface	9
<b>1 Scope</b>	<b>11</b>
<b>2 Reference publications</b>	<b>11</b>
<b>3 Definitions</b>	<b>15</b>
<b>4 General requirements</b>	<b>16</b>
4.1 Currency of compliance	16
4.2 Relationship with federal regulations	16
4.3 Seating positions	16
4.4 New technology and materials	16
4.5 Mounting of equipment supplied with the vehicle	17
4.6 Compliance label	17
<b>5 Chassis requirements</b>	<b>17</b>
5.1 Batteries	17
5.2 Brakes	17
5.3 Front bumper	18
5.4 Colour	18
5.4.1 Chassis, wheels, and grille	18
5.4.2 Hood	18
5.4.3 Other surfaces in the driver's direct line of vision	18
5.5 Drive shaft	18
5.6 Engine exhaust system	19
5.6.1 General	19
5.6.2 Type A buses	19
5.6.3 Type B, C, and D buses	19
5.7 Front fenders	19
5.8 Frame	19
5.9 Fuel system	20
5.9.2 Type C buses	20
5.9.3 Fuel fill hose assembly	20
5.10 Alternator	20
5.11 Gross vehicle weight	21
5.12 Horn	21
5.13 Instruments and instrument panel	21
5.13.1 Instruments, gauges, and indicators	21
5.13.2 Air system pressure gauge	21
5.14 Power and gradability	21
5.15 Shock absorbers	21
5.16 Steering gear and linkage	21
5.17 Tires and wheels	22

5.18	Turning radius	22
<b>6</b>	<b>Body requirements</b>	<b>22</b>
6.1	Aisles	22
6.2	Bus sizes	22
6.3	Rear bumper	23
6.4	Colour	23
6.5	Retroreflective marking	24
6.5.1	Rear	24
6.5.2	Sides	24
6.5.3	Material specifications	24
6.6	Construction of body	24
6.6.1	General	24
6.6.2	Type A2, B, C, and D buses	25
6.7	Defroster system	26
6.8	Service door	26
6.8.1	General	26
6.8.2	Service door emergency release	27
6.8.3	Type A buses	27
6.8.4	Type B, C, and D buses	27
6.8.5	Handrail	28
6.9	Emergency exits	28
6.9.1	General	28
6.9.2	Emergency doors	28
6.9.3	Roof hatches	29
6.9.4	Rear windows	30
6.9.5	Side windows	30
6.10	Emergency equipment	30
6.10.1	General	30
6.10.2	Advanced warning devices	30
6.11	Fire extinguisher	30
6.11.1	Type	30
6.11.2	Operating mechanism	31
6.11.3	Pressure gauge	31
6.11.4	Mounting	31
6.12	First aid kit	31
6.13	Floor covering	31
6.14	Heater system	32
6.15	Identification	32
6.16	Inside height	33
6.16.1	Type A1 bus	33
6.16.2	Type A2, B, C, and D buses	33
6.17	Insulation	33
6.18	Interior	33
6.19	Lamps, reflectors, and signals	34
6.19.1	Turn signals and stop lamps	34
6.19.2	Alternating flashing warning lamps	34
6.19.3	Floor-level side marker lamps	35
6.19.4	Interior lamps	35

- 6.19.5 Exterior lamps 35
- 6.19.6 Strobe lamp 35
- 6.19.7 Exit lamp 36
- 6.19.8 Exterior lamps for emergency exits 36
- 6.20 Locked compartment 36
- 6.21 Operator's manual 36
- 6.22 Mirrors 37
  - 6.22.1 General 37
  - 6.22.2 Interior rear-view mirrors 37
- 6.23 Body mounting 38
- 6.24 Noise suppression 38
- 6.25 Rub rails 39
- 6.26 Seat belt for driver 40
- 6.27 Seating 40
  - 6.27.1 General 40
  - 6.27.2 Covering material 40
  - 6.27.3 Type B, C, and D buses 40
- 6.28 Steps 41
  - 6.28.1 Height 41
  - 6.28.2 Additional requirements for steps in Type B, C, and D buses 41
- 6.29 Stirrup steps (Type C and D buses) 42
- 6.30 School bus stop arm 42
- 6.31 Pedestrian-student safety crossing arm 42
- 6.32 Sun shield (Type B, C, and D buses) 43
- 6.33 Undercoating 43
- 6.34 Ventilation 43
- 6.35 Wheelhousing 44
  - 6.35.1 General 44
  - 6.35.2 Type A2, B, C, and D buses 44
- 6.36 Windshield and windows 44
  - 6.36.1 General 44
- 6.37 Wiring 45
  - 6.37.1 General 45
  - 6.37.2 Circuits 45
  - 6.37.3 Insulation and protection 45
  - 6.37.4 Fastening and joining 45
- 6.38 Side intrusion 45

## **7 Accessible school buses 45**

- 7.1 General 45
- 7.2 International symbol of access 45
- 7.3 Mobility aid entrance 45
  - 7.3.1 Location 45
  - 7.3.2 Width and height 46
  - 7.3.3 Automated illumination 46
- 7.4 Emergency exit door 46
- 7.5 Aisle width 46
- 7.6 Mobility aids 46
  - 7.6.1 Space requirements 46

- 7.6.2 Securement 46
- 7.6.3 Mobility aid occupant restraint 47
- 7.6.4 Simultaneous loading 47
- 7.7 Lifts 47
- 7.8 Caution labels for entrances and lifts 47
- 7.8.1 Caution label for the mobility aid entrance 47
- 7.8.2 Caution label for the lift 47
- 7.8.3 Appearance 48
- 7.9 Seating for ambulatory passengers 48

## **8 Multifunction school activity buses 48**

- 8.1 General 48
- 8.2 Colour 48
- 8.3 Retroreflective marking 48
- 8.4 Identification 48
- 8.5 Luggage racks 48
- 8.6 Alternating flashing warning lamps 48
- 8.7 Strobe lamps 48
- 8.8 Rub rails 48
- 8.9 School bus stop arm 49
- 8.10 Pedestrian-student safety crossing arm 49
- 8.11 Compliance label 49

---

Annex A (normative) — Mirror testing protocol 56

Annex B (normative) — School bus heater test 61

Annex C (normative) — Roof hatch performance test 62

Annex D (informative) — Sections of the Motor Vehicle Safety Regulations applicable to school buses 64

Annex E (informative) — Technical differences between the current (2016) and ninth (2012) editions of this Standard 66



# Technical Committee on School Buses

<b>K. MacLean</b>	Golden Hills School Div. No. 75, Trochu, Alberta <i>Category: User Interest</i>	<i>Chair</i>
<b>F. Marasco</b>	School District No 73 (Kamloops/Thompson), Salmon Arm, British Columbia <i>Category: User Interest</i>	<i>Vice-Chair</i>
<b>R.F. Monster</b>	Ministry of Transportation (Ontario), St. Catharines, Ontario <i>Category: Regulatory Authority</i>	<i>Vice-Chair</i>
<b>N. Aisthorpe</b>	Motor Carrier Division, TIR, Halifax, Nova Scotia <i>Category: Regulatory Authority</i>	
<b>R. Baas</b>	Pacific Western Transportation, Calgary, Alberta	
<b>G. Bachand</b>	Department of Education and Early Childhood Development, Fredericton, New Brunswick <i>Category: Regulatory Authority</i>	
<b>R.T. Beal</b>	Sunrise School Division, Ste. Anne, Manitoba <i>Category: General Interest</i>	
<b>M. Bouchard</b>	Blue Bird Corporation, Hatley Township, Québec	<i>Associate</i>
<b>R.E. Briggler</b>	IC Corporation, Conway, Arkansas, USA	<i>Associate</i>
<b>R.C. Brown</b>	NAVISTAR, Burlington, Ontario	<i>Associate</i>
<b>S. Buchan</b>	Perry Rand Transportation Group Ltd., Waterville, Nova Scotia <i>Category: User Interest</i>	

<b>R. Campbell</b>	Allied Specialty Vehicles (ASV), Cambridge, Ontario <i>Category: Producer Interest</i>	
<b>S. Carey</b>	Parachute Canada, Toronto, Ontario <i>Category: General Interest</i>	
<b>C. Chartrand</b>	Lion Buses, St-Jérôme, Québec <i>Category: Producer Interest</i>	
<b>H. Davis</b>	High Prairie School Division No. 48, High Prairie, Alberta <i>Category: User Interest</i>	
<b>S. Dove</b>	Toronto District School Board/ Catholic District School Board, Toronto, Ontario <i>Category: General Interest</i>	
<b>T.J. Downey</b>	Trans Tech Bus - TCI, Warwick, New York, USA	<i>Associate</i>
<b>K.C. Everett</b>	HSM Transportation Solutions, New Washington, Ohio, USA	<i>Associate</i>
<b>G. Ford</b>	Ministry of Transportation and Infrastructure (MoTI), Victoria, British Columbia	<i>Associate</i>
<b>M. Gosset</b>	Stock Transportation, Barrie, Ontario <i>Category: User Interest</i>	
<b>C.A. Hagen</b>	Manitoba Education and Advanced Learning, Winnipeg, Manitoba <i>Category: Regulatory Authority</i>	
<b>K. Hendershot</b>	Transport Canada, Ottawa, Ontario <i>Category: Regulatory Authority</i>	
<b>D. Jackson</b>	Saskatchewan School Boards Association, Regina, Saskatchewan	<i>Associate</i>

<b>B. Kangas</b>	Ministry of Transportation and Infrastructure (MoTI), Victoria, British Columbia <i>Category: Regulatory Authority</i>	
<b>J. Labonte</b>	IC Bus, Tulsa, Oklahoma, USA <i>Category: Producer Interest</i>	
<b>D.P. McDonald</b>	Rosco Vision Systems, Inc., Fredericktown, Ohio, USA	<i>Associate</i>
<b>D. Mell</b>	Association of School Transportation Services of BC, Kamloops, British Columbia <i>Category: General Interest</i>	
<b>G.D. Moore</b>	Pacific Western Transportation, Calgary, Alberta <i>Category: User Interest</i>	<i>Associate</i>
<b>C. Nadeau</b>	Micro Bird Corporation Inc., Drummondville, Québec	<i>Associate</i>
<b>J.A. Penney</b>	Motor Carrier Division, TIR, Halifax, Nova Scotia	<i>Associate</i>
<b>J. Peslari</b>	Saskatchewan Government Insurance AutoFund, Regina, Saskatchewan <i>Category: Regulatory Authority</i>	
<b>M. Scheuler</b>	Collins Bus Corporation, South Hutchinson, Kansas, USA <i>Category: Producer Interest</i>	
<b>R.L. Stanley</b>	Thomas Built Buses, Inc., High Point, North Carolina, USA <i>Category: Producer Interest</i>	
<b>J. Switzer</b>	Switzer-Carty Transportation Services Inc., Burlington, Ontario <i>Category: User Interest</i>	
<b>C. Touil</b>	Fédération des commissions Scolaires du Québec, Québec, Québec	<i>Associate</i>
<b>P. Turner</b>	Micro Bird Corporation Inc., Drummondville, Québec	<i>Associate</i>

---

<b>M. Wescott</b>	Collins Bus Corporation, South Hutchinson, Kansas, USA	<i>Associate</i>
<b>T. Woodard</b>	Blue Bird Body Company, Fort Valley, Georgia, USA <i>Category: Producer Interest</i>	
<b>M.D. Woods</b>	MD Woods Consulting Inc., Sidney, British Columbia <i>Category: General Interest</i>	
<b>C. Yanitski</b>	Alberta Transportation, Edmonton, Alberta <i>Category: Regulatory Authority</i>	
<b>D. Shanahan</b>	CSA Group, Toronto, Ontario	<i>Project Manager</i>

# Preface

This is the tenth edition of CSA D250, *School buses*. It supersedes the previous editions, published in 2012, 2007, 2003, 2000, 1998, 1985, 1979, 1975, and 1971. CSA D270, *Multi-functional activity buses*, has been amalgamated into this edition of CSA D250 (as Clause 8). As such, this Standard replaces CSA D270.

CSA D270, *Multi-functional activity buses*, was published in 2008 to address the need for a safer alternative to the use of buses not classified as school buses in the transportation of passengers to child care, pre-primary, primary, youth, or community activities or facilities. An assessment of the use of these buses across Canada found that the vast majority of them were being used for the transportation of children and youths for school-related activities and community recreational activities. In view of this, and considering that most of the design criteria for these buses were derived from CSA D250, the Technical Committee agreed that the two Standards should be amalgamated, with the special requirements for multi-functional activity buses incorporated as a separate clause (Clause 8) in D250. With this amalgamation, “multi-functional activity buses” are now identified as “multifunction school activity buses” (MFSABs).

The following are significant changes made in this edition of CSA D250 (see also Annex E):

- modified weight ranges for various school bus types (harmonization with the U.S. classification scheme);
- added provisions for vehicles powered by alternative fuel systems;
- clarification of chassis and body colour requirements;
- various improvements to requirements for emergency equipment, emergency lighting, and emergency exits;
- modifications to exterior lighting requirements;
- modifications to requirements for windows;
- updated requirements for lifts and seating in accessible school buses (see Clause 7); and
- requirements integrated from CSA D270 (now withdrawn) for Multifunction school activity buses (see Clause 8).

This Standard is intended to apply to vehicles manufactured on or after November 1, 2016. The manufacturing date of the vehicle is considered to be the date on the federal compliance label.

This Standard was prepared by the Technical Committee on School Buses, under the jurisdiction of the Strategic Steering Committee on Mechanical and Industrial Equipment Safety, and has been formally approved by the Technical Committee.

## 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 Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*
- 3) *This Standard was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity”. It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*
- 4) *To submit a request for interpretation of this Standard, please send the following information to [inquiries@csagroup.org](mailto:inquiries@csagroup.org) and include “Request for interpretation” in the subject line:*
  - a) *define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;*
  - b) *provide an explanation of circumstances surrounding the actual field condition; and*

- c) *where possible, phrase the request in such a way that a specific “yes” or “no” answer will address the issue.*

*Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standards Activities page at [standardsactivities.csa.ca](http://standardsactivities.csa.ca).*

- 5) *This Standard is subject to review five years from the date of publication, and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to [inquiries@csagroup.org](mailto:inquiries@csagroup.org) and include “Proposal for change” in the subject line:*
  - a) *Standard designation (number);*
  - b) *relevant clause, table, and/or figure number;*
  - c) *wording of the proposed change; and*
  - d) *rationale for the change.*

# D250-16

## School buses

### 1 Scope

#### 1.1

This Standard specifies the chassis and body requirements and safety equipment requirements for school buses. It is a manufacturing standard intended to apply to original equipment supplied by the bus manufacturer.

**Note:** *The main purpose of this Standard is to provide the safest possible vehicle for students using school buses. It needs to be stressed, however, that standards are not substitutes for thorough, ongoing, and comprehensive safety training of students and drivers.*

#### 1.2

This Standard applies to the following types of vehicles:

- a) Type A1, A2, B, C, and D school buses;
- b) Type A1, A2, B, C, and D accessible school buses; and
- c) Multifunction school activity buses (MFSABs).

**Note:** *It is intended that this Standard will apply to those vehicles manufactured on and after November 1, 2016. It is anticipated that the authority having jurisdiction in each Province or Territory will apply this Standard to vehicles manufactured on and after that date.*

#### 1.3

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “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 standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (nonmandatory) to define their application.

#### 1.4

The values given in SI units are the units of record for the purposes of this Standard. The values given in parentheses are for information and comparison only.

## 2 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below, including all amendments published thereto.