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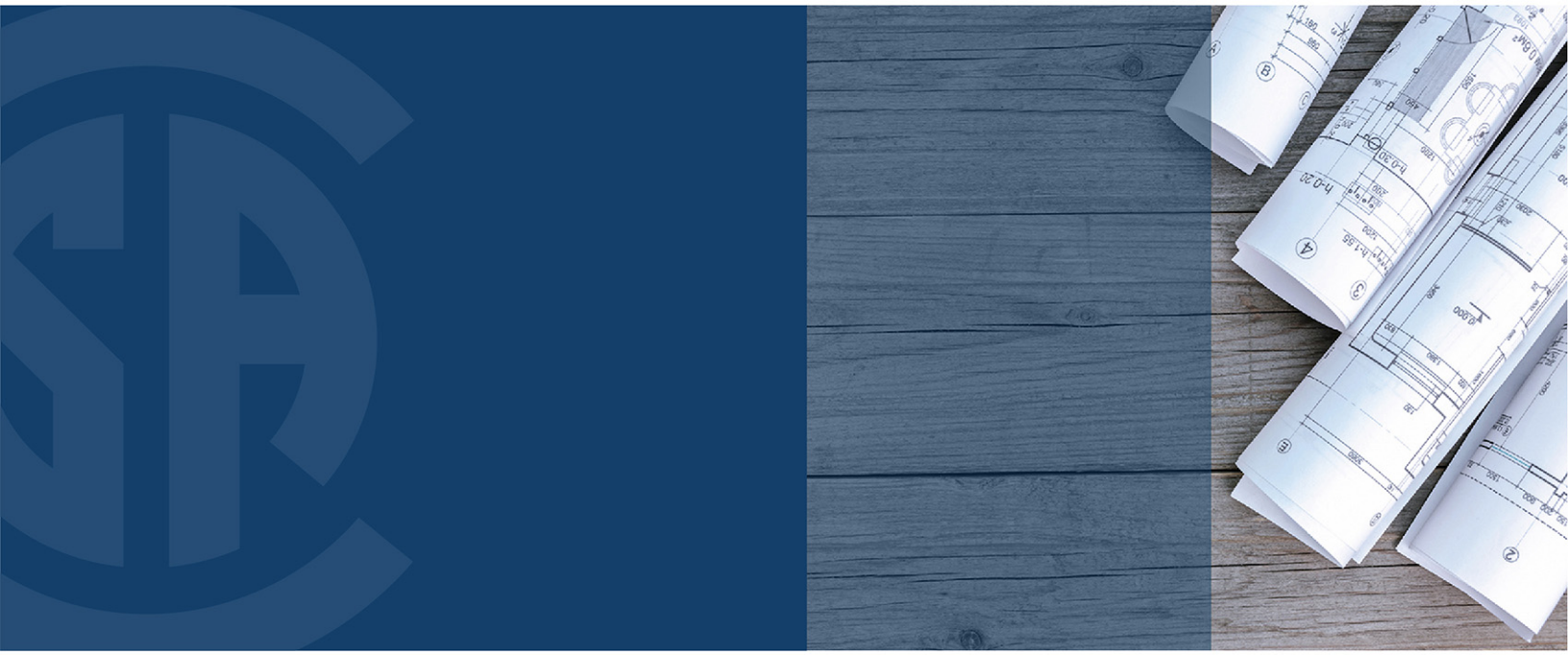
CSA A123.21:14

National Standard of Canada

(reaffirmed 2019)

Standard test method for the dynamic wind uplift resistance of membrane-roofing systems



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Contents

Preface

This is the third edition of CSA A123.21, Standard test method for the dynamic wind uplift resistance of membrane-roofing systems. It supersedes the previous editions published in 2010 and 2004.

This Standard is based on the ongoing research and testing that is being carried out at the National Research Council (NRCC).

This edition is applicable to the majority of the commercial roof assemblies in North America under three different categories depending on the component attachment to the substrate, namely adhesive applied membrane roofing system, mechanically attached membrane roofing system and partially attached (hybrid) membrane roofing system.

Two test methods that are now included in this Standard are as follows:

a) Method 1 — a dynamic test procedure developed by the National Research Council Canada (NRCC) industry-based consortium, initiated in 1994. The consortium is known as the Special Interest Group for Dynamic Evaluation of Roofing Systems (SIGDERS).
b) Method 2 — a dynamic test procedure developed by the National Research Council Canada (NRCC) industry-based consortium, initiated in 2005 in collaboration with the University of Ottawa. The consortium is known as the Adhesive Applied Roofing Systems (AARS).

CSA Group acknowledges that the development of this Standard was made possible, in part, by the financial support from the consortia members.

This Standard was prepared by the Technical Committee on Bituminous Roofing Materials, under the jurisdiction of the Strategic Steering Committee on Building Products and Systems, and has been formally approved by the Technical Committee.

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

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 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.
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 and include "Proposal for change" in the subject line:*
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b) *relevant clause, table, and/or figure number;*
c) *wording of the proposed change; and*
d) *rationale for the change.*

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CSA A123.21:14
Standard test method for the dynamic wind uplift resistance of membrane-roofing systems

1 Scope

1.1
This test method determines the wind uplift resistance of membrane-roofing systems when subjected to dynamic wind load cycles. The test methods are applicable to

a) mechanically attached membrane roofing systems; and
b) adhered membrane roofing systems.

The roofing system consists of a deck and roofing membrane. It includes components such as vapour barriers or retarders, insulation, cover board, etc. It is subjected to a dynamic load sequence that has been developed based on wind pressure records, simulating the effects of wind on membrane-roof assemblies.

Note: *The roof membrane may be designated as the plane of air tightness.*

1.2
The following limitations apply for the test methods in this Standard:

a) Method 1: Testing in accordance with this test method is limited to mechanically attached membrane roofing systems having a fastener row separation not greater than 2896 mm (114 in) and fastener in-line spacing not greater than 610 mm (24 in).
b) Method 2: Testing in accordance with this test method is limited to adhered membrane roofing systems.

1.3
The values given in SI (metric) units are the standard. The values given in parentheses are for information only.

1.4
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.