

Certification of manufacturers of steel building systems



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 treaty 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 form.

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.



Update No. 1

A660-10

September 2010

Note: General Instructions for CSA Standards are now called Updates. Please contact CSA Information Products Sales or visit www.ShopCSA.ca for information about the **CSA Standards Update Service**.

Title: Certification of manufacturers of steel building systems — originally published January 2010

The following revisions have been formally approved and are marked by the symbol delta (Δ) in the margin on the attached replacement pages:

Revised	Figures 2 and 3
New	None
Deleted	None

CSA A660-10 originally consisted of **19 pages** (vi preliminary and 13 text), each dated **January 2010**. It now consists of the following pages:

January 2010	iii–vi, 1–8, and 13
September 2010	9–12

- Update your copy by inserting these revised pages.
- Keep the pages you remove for reference.

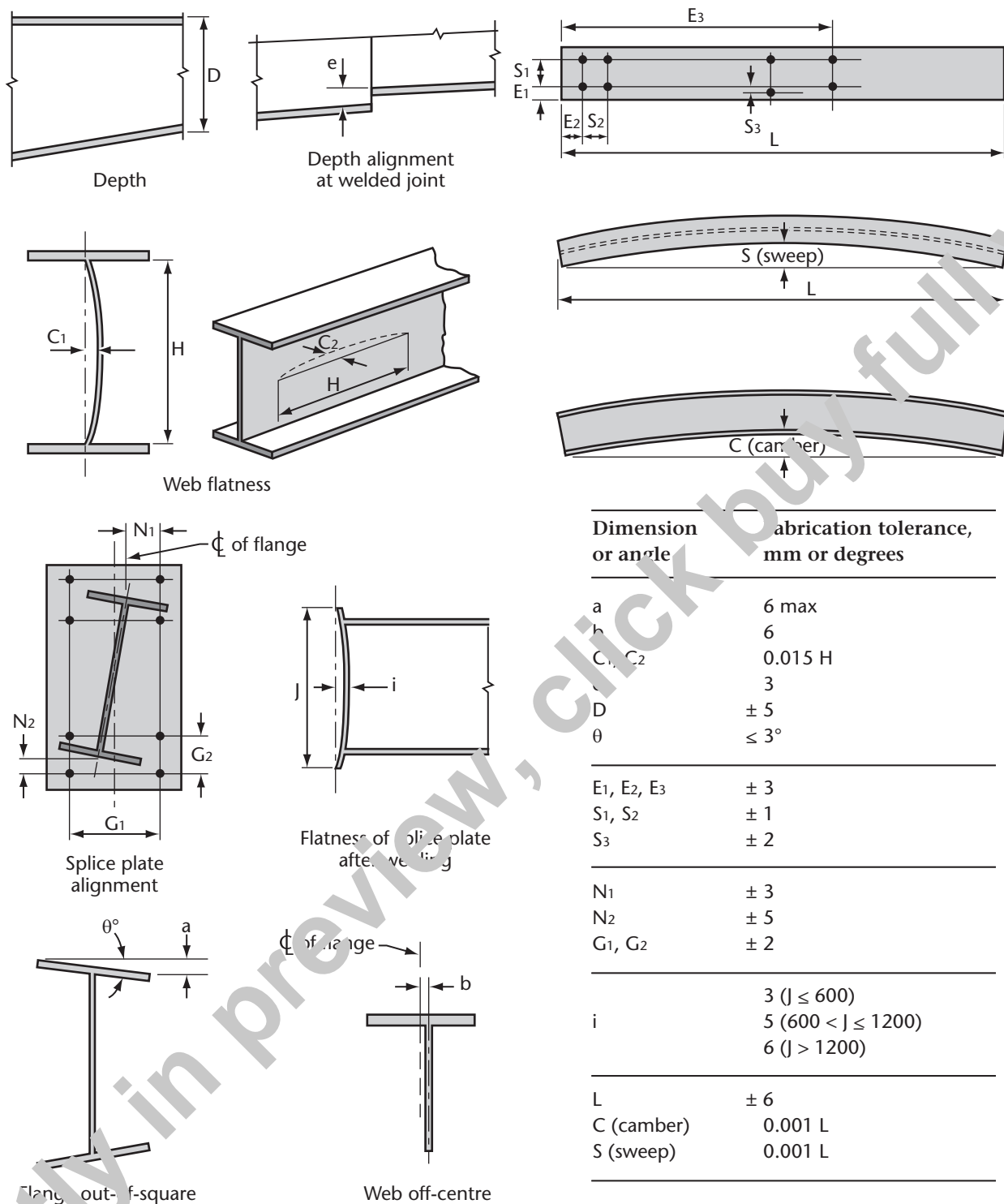
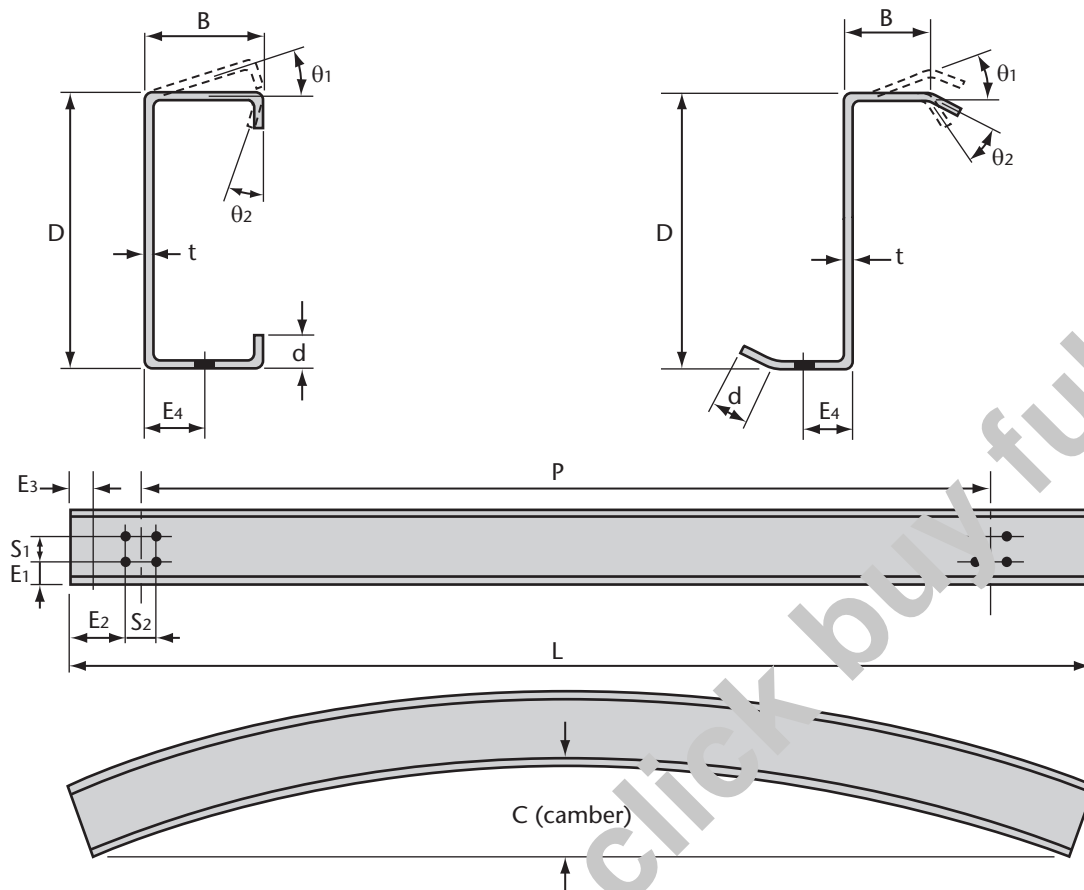


Figure 1
Fabrication tolerances for built-up structural members
 (See Clause 8.4.)



Dimension or angle	Fabrication tolerance, mm or degrees
B, D	± 5
d	+ 10, -3
θ_1	$\pm 3^\circ$
θ_2	$\pm 5^\circ$
P, L	± 3
C	0.002 L
E1, E2, E3, E4	± 3
S1, S2	± 2
t	In accordance with CSA S136

Figure 2
Fabrication tolerances for formed structural members
 (See Clause 8.4.)

Certificate of design and manufacturing conformance

This Certificate is to affirm that all components of the steel building system described below, to be supplied by the named manufacturer certified in accordance with CSA A660, have been or will be designed and fabricated in accordance with the following Standards to carry the loads and load combinations specified.

1. DESCRIPTION

Manufacturer's name and address _____
 Manufacturer's Certificate No. under CSA A660 _____
 Customer order number _____
 Building type and size _____
 Intended use and occupancy _____
 Importance category [NBC, Sentence 4.1.2.1.(3)] _____
 Site location _____
 Applicable building code _____
 Builder's name and address _____
 Owner's name and address _____

2. DESIGN STANDARDS

National Building Code of Canada, 2005, Part 4: Structural Design

CSA S16-09, Design of steel structures

CSA S136-07, North American specification for the design of cold-formed steel structural members

Other (specify) _____ dated _____

Engineer's initials* _____

3. MANUFACTURING STANDARDS

- (a) Fabrication has been or will be in accordance with CSA S16 and CSA S136, as applicable.
- (b) Welding has been or will be performed in accordance with CSA W59 and CSA S136, as applicable.
- (c) The manufacturer has been certified in accordance with CSA W47.1, for Division 1 or 2, and/or CSA W55.3, if applicable.
- (d) Welders have been qualified in accordance with CSA W47.1.

4. PURLIN STABILITY

Purlin braces are provided in accordance with CSA S136, Clause D3 and Appendix B, Clause D3.2.3. In particular, for a standing seam roof supported on movable clips, braces providing lateral support to both top and bottom purlin flanges have been or will be provided. The number of rows is determined by analysis but in no case is it less than 1 for spans up to 7 m inclusive or less than 2 for spans greater than 7 m.

5. LOADS

(a) Snow, ice, and rain loads

1-in-50 year ground snow load, S_g , _____ (kPa)

1-in-50 year associated rain load, S_r , _____ (kPa)

Wind exposure factor, C_{we} , _____

Importance factor, _____

Roof snow load, _____ (kPa)

Drift load considered (NBC, Sub-section 4.1.6.2.8). Refer to drawing of specific building.

Specified roof load (NBC, Clause 4.1.6.4) _____ (mm)

*Initials match the statement. Mark N/A if statement does not apply.

Figure 3
Certificate of design and manufacturing
 (See Clause 12.)

(Continued)

	Engineer's initials* _____
(b) Full and partial snow load	
(i) Applied on any one and any two adjacent spans of continuous purlins	
(ii) Applied on any one and any two adjacent spans of modular rigid frames with continuous roof beams	
(iii) Applied as described for the building geometry in <i>NBC, Part 4</i> , and in the <i>User's Guide — NBC 2005: Structural Commentaries (Part 4), Commentary G: Snow Loads</i>	
(c) Wind load	
1-in-50 year reference velocity pressure _____ (kPa)	_____
Importance factor, I_w _____	_____
(d) Wind load application	
(i) Applied in accordance with <i>NBC, Part 4, Section 4.1.7</i>	
(ii) Pressure coefficients in accordance with <i>User's Guide — NBC 2005: Structural Commentaries (Part 4), Commentary I: Wind Loads, Figures I3 through I12</i>	
(iii) Building internal pressure category in accordance with <i>User's Guide — NBC 2005: Structural Commentaries (Part 4), Commentary I: Wind Loads</i>	
(e) Crane loads (where applicable)	
Type _____ (top-running) (under-running) (jib)	
Capacity _____ (tonnes)	
Wheel base _____ (m)	
Maximum static, vertical wheel load _____ (kN)	
Vertical impact factor _____	
Lateral factor _____ % Lateral wheel load _____ (kN)	
Longitudinal factor _____ % Maximum longitudinal load _____ (kN)	
(f) Mezzanine live load _____ (kPa)	_____
(g) Seismic load	
Applied in accordance with <i>NBC, Part 4, Sub-section 4.1.8</i>	
$S_a(0.2)$ _____ $S_a(0.5)$ _____ $S_a(1.0)$ _____ $S_a(2.0)$ _____	
Site class _____ F_a _____ F_v _____ I_E _____	
(h) Other live loads (specify)	_____
(i) Dead loads	
Dead load of building components is incorporated in the design	
Collateral load (mechanical, electrical, ceiling, sprinklers, etc.) _____ (kPa)	
Mezzanine _____ (kPa)	
Other (specify) _____ ()	_____
(j) Load combinations	
Applied in accordance with <i>NBC, Part 4, Section 4.1.</i>	
6. GENERAL REVIEW DURING CONSTRUCTION	
The manufacturer does not provide general review during construction for regulatory purposes.	
*Initial each true statement. Mark <i>N</i> if statement or section does not apply.	
7. CERTIFICATION BY ENGINEER	
I, _____, an Engineer registered or licensed to practice in the	
Province or Territory of _____, hereby certify that I have reviewed the	
design and manufacturing process for the steel building system described. I certify that the foregoing statements,	
initialled by me, are true.	
Name _____ Signature _____	
Title _____	
Affiliation _____ Date _____	
Professional seal _____	

Figure 3 (Concluded)

Standards Update Service

A660-10

January 2010

Title: *Certification of manufacturers of steel building systems*

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

- go to store.csagroup.org
- click on **Product Updates**

The **List ID** that you will need to register for updates to this publication is **24204.2**

If you require assistance, please e-mail techsupport@csagroup.org or call 419-747-2233.

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

A660-10
***Certification of manufacturers of
steel building systems***



®A trademark of the Canadian Standards Association, operating as "CSA Group"

*Published in January 2010 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 store.csagroup.org
or call toll-free 1-800-463-6727 or 416-747-4044.*

ISBN 978-1-55491-344-2

*© 2010 Canadian Standards Association
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 Certification of Manufacturers of Steel Building Systems iv

Preface vi

1 Scope 1

2 Reference publications 1

3 Definitions 3

4 General 3

5 Personnel 4

6 Design and engineering 4

7 Materials control 5

7.1 General 5

7.2 Steel structural components 5

7.3 Steel cladding and steel appurtenances 5

7.3.1 Unpainted 5

7.3.2 Colour-coated 6

7.4 Other materials 6

8 Fabrication 6

8.1 Materials 6

8.2 Capabilities 6

8.3 Shop painting 6

8.4 Tolerances 6

8.5 Wall and roof panels 6

9 Warehousing, packaging, and shipping 6

10 Erection documentation 7

11 Plant quality program 7

11.1 Objectives and procedures 7

11.2 Inspection, testing, and recordkeeping 7

11.3 Sublet work and purchased items 7

12 Certificate of design and manufacturing conformance 7

Annexes

A (informative) — Administration 13

Figures

1 — Fabrication tolerances for built-up structural members 9

2 — Fabrication tolerances for formed structural members 10

3 — Certificate of design and manufacturing 11