

# **ICC 400-2012**

## **Standard on the Design and Construction of Log Structures**

American National Standard

International Code Council  
500 New Jersey Avenue, NW, 6th Floor  
Washington, D.C. 20001

Approved August 17, 2011

American National Standards Institute  
1899 L Street, NW, 11th Floor  
Washington, D.C. 20036



# American National Standard

Approval of an American National Standard requires verification by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when in the judgement of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he or she has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

**CAUTION NOTICE:** This American National Standard may be revised or withdrawn at anytime. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this standard. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

# FOREWORD

## Introduction

In 2003, upon direction from the ICC Board of Directors, the ICC Standards Council appointed a consensus committee to develop a standard to cover the design and construction of log structures.

## Development

This is the second edition of the International Code Council® (ICC®) *Standard on the Design and Construction of Log Structures*. This standard was developed by the ICC Consensus Committee on Log Structures (IS-LOG) that operates under ANSI Approved ICC Consensus Procedures for the development of ICC standards. ICC is approved by ANSI as an Accredited Standards Developer.

The meetings of the IS-LOG Consensus Committee were open to the public and interested individuals and organizations from across the country participated. Views and objections were solicited through several public comment periods. All views and objections were considered by the consensus committee and an effort was made toward their resolution. A vote by the consensus committee approved this standard.

The requirements in ICC 400 are based on the intent to establish provisions consistent with the scope of the ICC family of codes and standards that adequately protect public health, safety and welfare; provisions that do not necessarily increase construction costs; provisions that do not restrict the use of new materials, products or methods of construction.

## Adoption

ICC 400, *Standard on the Design and Construction of Log Structures* is available for adoption and use by jurisdictions internationally. Its use within a governmental jurisdiction is intended to be accomplished through adoption by reference in accordance with proceedings establishing the jurisdiction's law.

## Formal Interpretations

Requests for Formal Interpretations on the provisions of ICC 400-2012 should be addressed to: ICC, Chicago District Office, 4051 West Flossmoor Road, Country Club Hills, IL 60478.

### Maintenance – Submittal of Proposals

All ICC standards are revised as required by ANSI. Proposals for revising this edition are welcome. Please visit the ICC website at [www.iccsafe.org](http://www.iccsafe.org) for the official “Call for Proposals” announcement. A proposal form and instructions can also be downloaded from [www.iccsafe.org](http://www.iccsafe.org).

ICC, its members and those participating in the development of ICC 400-2012 do not accept any liability resulting from compliance or noncompliance with the provisions of ICC 400-2012. ICC does not have the power or authority to police or enforce compliance with the contents of this standard. Only the governmental body that enacts this standard into law has such authority.

## International Code Council Consensus Committee on Log Structures (IS-LOG)

Consensus Committee SCOPE: The Consensus Committee (CC) on Log Structures (IS-LOG) shall have primary responsibility for minimum requirements to safeguard the public health, safety and general welfare through design, construction and installation requirements for log and heavy timber structures.

This standard was processed and approved for submittal to ANSI by the ICC Consensus Committee on Log Structures (IS-LOG). Committee approval of the standard does not necessarily imply that all committee members voted for its approval.

Representatives on the Consensus Committee are classified in one of three voting interest categories. The committee has been formed in order to achieve consensus as required by ANSI Essential Requirements. At the time it approved this standard, the IS-LOG Consensus Committee consisted of the following members:

General Interest (G) - User Interest (U) - Producer Interest (P)

**Larry Beineke** (U), PFS Corporation, Raleigh, North Carolina

**Thomas Castle** (U), Ficcadenti Waggoner & Castle, Walnut Creek, California

**Christopher Clay** (Alternate P), Great Lakes Log Crafters Association, Knife River, Minnesota

**Gary Hautman** (G), Douglas County Building Division, Castle Rock, Colorado

**James “Jay” Horner** (G), City of Gatlinburg, Gatlinburg, Tennessee

## FOREWORD

**Daniel Icove** (U), University of Tennessee, Knoxville, Tennessee

**Robert G. Kenel** (P), Great Lakes Log Crafters Association, St. Charles, Michigan

**Rob Pickett**, Chair (P), Log Homes Council, NAHB, Hartland, Vermont

**Sharon Walter** (G), City of Highland, Highland, Illinois

**Bob Wawen** (P), BC Log and Timber Building Industry, Rossland, BC Vok 2EO Canada

Committee Secretary: **Edward L. Wirtschoreck**, L.A., Manager of Standards, International Code Council, Country Club Hills, Illinois

### Voting Membership in Each Category

Category	Number
General—(G)	3
User—(U)	3
Producer—(P)	3
TOTAL	9

### Interest Categories

**General Interest:** Individuals assigned to the General Interest category are those who represent the interests of an entity, including an association of such entities, representing the general public, or entities that promulgate or enforce the provisions within the committee scope. These entities include consumers and government regulatory agencies.

**User Interest:** Individuals assigned to the User Interest category are those who represent the interests of an entity, including an association of such entities, which is subject to the provisions or voluntarily utilizes provisions within the committee scope. These entities include academia, applied research laboratory, building owner, design professional, government non-regulatory agency, insurance company, private inspection agency, and product certification/evaluation agency.

**Producer Interest:** Individuals assigned to the Producer Interest category are those who represent the interests of an entity, including an association of such entities, which produces, installs, or maintains a product, assembly, or system subject to the provisions within the committee scope. These entities include builder, contractor, distributor, labor, manufacturer, material association, standards promulgator, testing laboratory and utility.

**NOTE—Multiple Interests:** Individuals representing entities in more than one of the above interest categories, one of which is a Producer Interest, are assigned to the Producer Interest. Individuals representing entities in the General Interest and User Interest categories are assigned to the User Interest.

# TABLE OF CONTENTS

## CHAPTER 1 ADMINISTRATIVE PROVISIONS..... 1

### Section

101	Administrative Provisions.....	1
102	Applicability.....	1
103	Provisions For Compliance.....	1
104	Compliance Alternatives.....	1
105	Conventions.....	1
106	Inspections.....	1
107	Foundations.....	1
108	Design Loads.....	1
109	Referenced Documents.....	2

## CHAPTER 2 DEFINITIONS ..... 3

### Section

201	General.....	3
202	Defined Terms.....	3
203	Symbols.....	4

## CHAPTER 3 GENERAL REQUIREMENTS..... 7

### Section

301	General.....	7
302	Materials.....	7
303	Fire-Resistance Ratings Of Logs and Log Assemblies.....	46
304	Provisions For Settling In Log Structures.....	47
305	Thermal Envelope.....	53
306	Infiltration.....	56

## CHAPTER 4 STRUCTURAL PROVISIONS ..... 59

### Section

401	General.....	59
402	Prescriptive Provisions.....	59
403	Engineered Provisions.....	59
404	Connections.....	60
405	Floor Systems.....	61
406	Log Walls.....	61
407	Roof Systems.....	62

## CHAPTER 5 REFERENCED STANDARDS ..... 63