Log Homes

INSPECTION CERTIFICATION ASSOCIATES

Log Homes Compliance

(ICC400-2012)

2012 ICC Standard on the Design and Construction of Log Structures

Log and Timber Homes Council

ICC400-2012

- ICC400-2012 is applicable to all "types of construction whose primary structural elements are formed by a system of logs." All proprietary methods and materials of construction must demonstrate compliance with sections of the standard as required by the jurisdiction having authority.

Non-Log Portions

It is important to note that non-log portions of the building (e.g., foundation, roofing, plumbing, mechanical, electrical, etc.) must comply with applicable adopted codes.

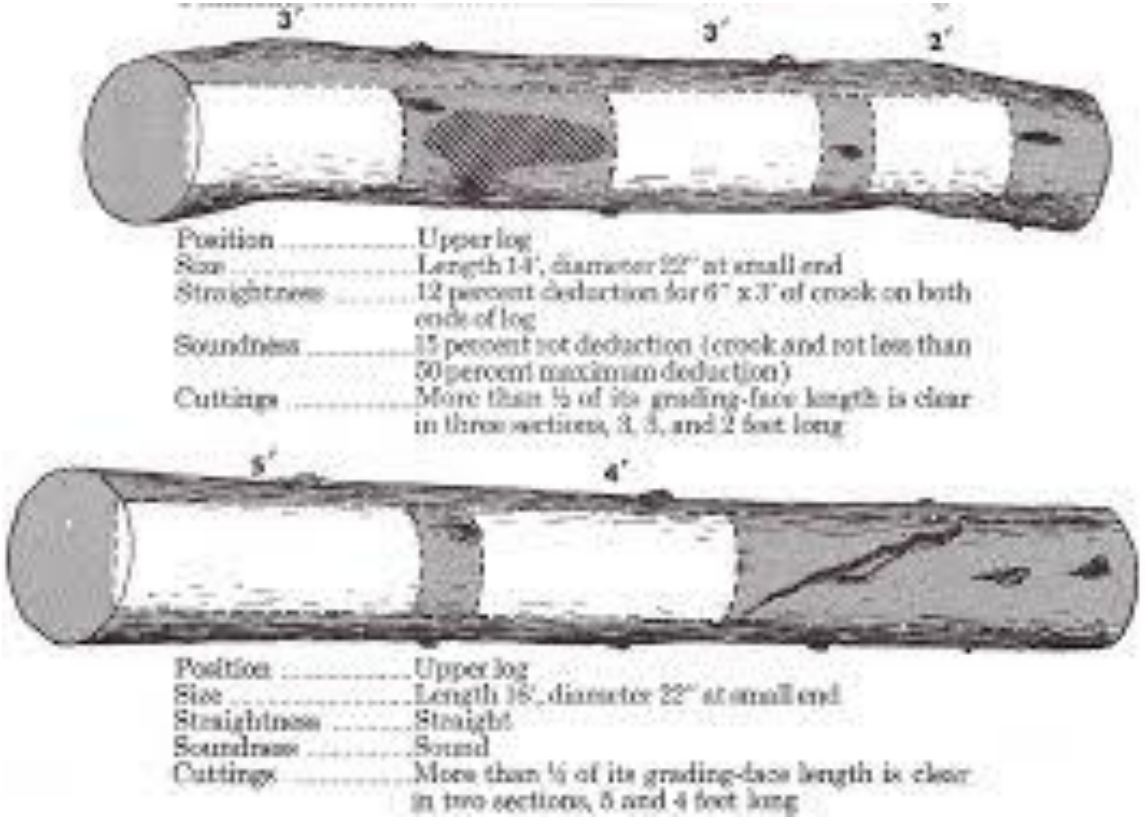
ICC400

ICC400 addresses many of the unique attributes of log and timber home construction that diverge from the codes and standards written for non-log structures:

- Log Grading
- Fire-resistance
- Energy Conservation
- Settling
- Roof Overhang

Log Grading

- All logs used in a structural capacity are required to be visually stress graded. Such grading must be performed under the auspices of an accredited grading agency

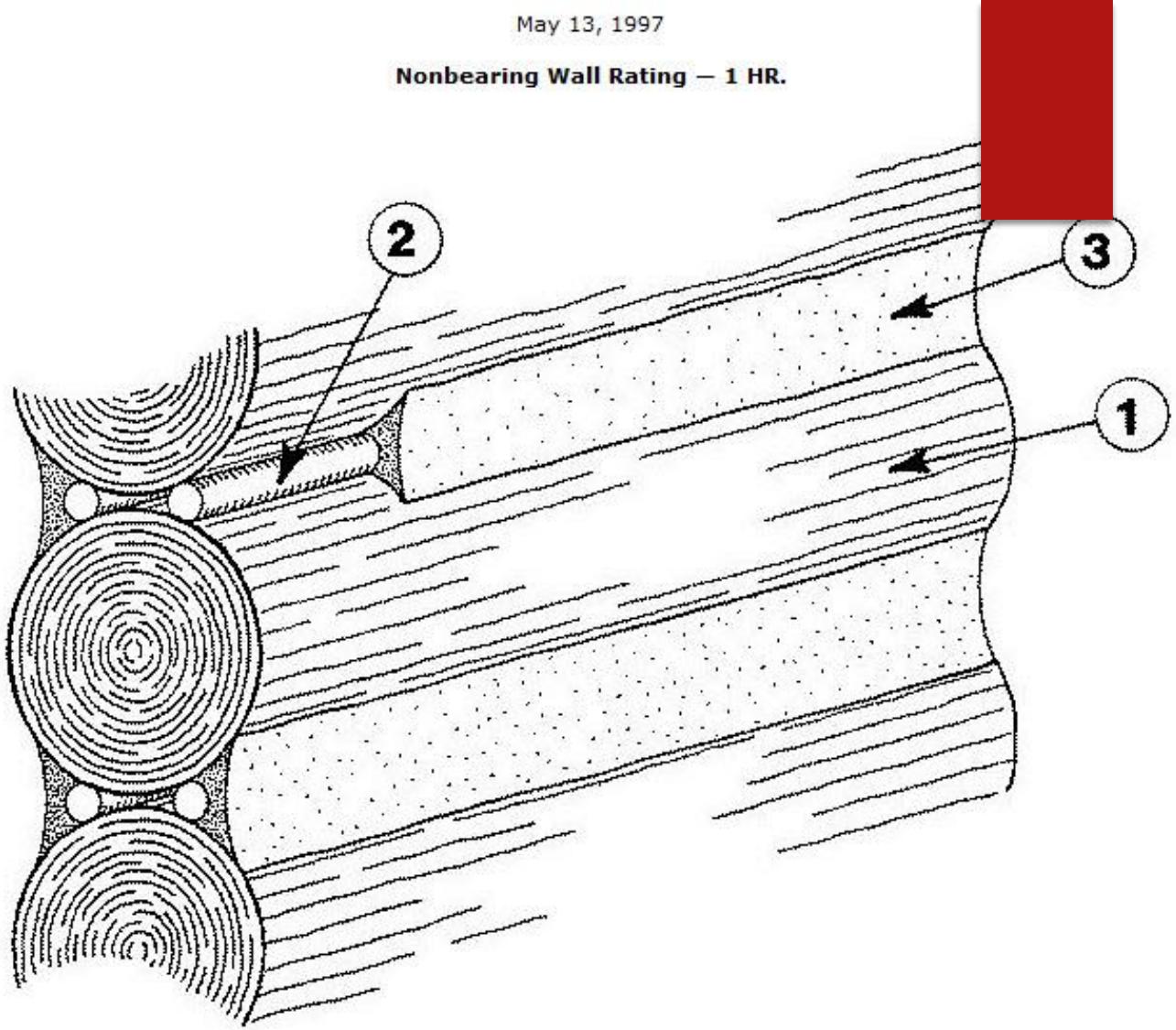


Fire-resistance

Prior to ICC400, log wall systems were regularly challenged by code officials where fire resistive construction was required. ICC400 sets a prescriptive requirement that a log wall used for 1-hour fire separation have a minimum dimension of 6" at the narrowest width of the log profile.

May 13, 1997

Nonbearing Wall Rating — 1 HR.



1. **Wood Logs** — Soft wood timbers with a minimum diameter of 7.0 in. The gap between the logs shall not be greater than 2-1/2 in.

2. **Backer Rod** — Foamed polyethylene backer rod used to fill the gap between wood logs and to provide support to the chinking material. The diameter of the backing rod varies with the width of the gap between logs. The backer rod may be mechanically secured to the wood logs.

3. **Caulking and Sealants*** — The chinking material is applied with a caulking gun over the backing rod and to the surface of each log adjacent to the backer rod. The minimum thickness shall be 0.5 in. The maximum width shall not exceed 4 in. The chinking material may be troweled to achieve a smooth finish and/or feather the edges.

Energy Conservation

Solid wood walls have a dynamic relationship that tempers the temperature and relative humidity of the interior climate. They do not have tremendous R-values, a static measure of heat transfer using standards developed to measure insulation products. Closely tied to the IECC, log walls benefit as a mass wall and two methods are provided to facilitate compliance with the energy code – a prescriptive U-factor for logs of particular wood species and average log width or a prescriptive minimum requirement for the overall thermal envelope.

Settling

ICC400 expanded the evaluation of log structures to include provisions for settling, which encompasses log grade, moisture content, and shape. It governs how joints are managed with sealant systems and establishes minimum requirements for how the change in log wall height is accommodated in other aspects of the building.

Roof Overhang

- Roof overhang minimum requirements are designed to minimize repeated wetting of lower log courses that generates deterioration of the finish and wood surface. Options are presented to eliminate splash back on the wall from lower horizontal surfaces (e.g., a porch roof, balcony, deck, or any individual log member). The extension of the roof overhang shall be measured horizontally from the face of the exterior wall to the drip line at the edge of the overhang.

Inspecting Log Homes

Log homes, because of their unique construction materials and techniques, pose their set of issues. Like many homes, moisture is always a concert, but even more so with log homes. The structure, exterior siding, building envelope, and interior sheathing is all at risk. Items to pay attention to are:

- Storm water management
- Wood destroying organism potential and damage
- Expansion, contraction, and settlement of wood members

Storm Water Management

Unfortunately, gutters, downspouts, and other storm water management measures are never installed on log homes because they are not aesthetically pleasing. Because of this, walls and other wood structures are always potentially at risk for moisture related problems. Increased ground moisture to foundation is also a common problem.

Wood Destroying Organisms

WDO Prevention Sill Plate

Chemical Wood Protection

Foundation Treatment

Congratulations!

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