

Subject: R-Factor, Thermal Mass & Energy Codes
 From: "Gabe Gordon" <gabe.gordon@kathindincedarloghomes.com>
 Date: 1/15/2013 3:26 PM
 To: <loghomenews@gmail.com>, <rtshew@techhigh.us>, "Aaron Dunn" <aaron@bigwhites.com>, "N & Tami Whitmore" <alghomes@aol.com>, "Bill & Rachel Ryan" <ryanyaz@roadrunner.com>, "Bill Martin" <katshindv7@comcast.net>, "Bill Seymour" <bill@cardinalogcenter.com>, "Bob & Karla Winnie" <wib@ear@whnng.com>, "Bob Bessiole" <bob@bessiole.com>, "Bob Carlin" <carlincontractors@comcast.net>, "Bob Ducoy" <bob@westincabinets.com>, "Brad & Lorraine Tomlin" <tomlinlog_landscapes@netzone.net>, "Brian Shreve" <brian@frontier.net>, "Bryant Butterfield" <bryant@water.net>, "Buddy Goodson" <buddygoodson@aol.com>, "Carrill & Linda Gould" <carrolll@jps.com>, "Casey Crabb" <ccrabb2012@aol.com>, "Chapue Solomon" <csolomon@whnng.com>, "David Pierce" <dpierce@aol.com>, "Dennis Lower" <dennis@cedarloghomes.com>, "Derry & Randi Palmer" <randipalmer@aol.com>, "Ed Davis" <ed.davis@cedarloghomes.com>, "Eric Halziner" <erichal@comcast.net>, "Frank Gether" <campfrank@gmail.com>, "Gabe Gordon" <gabe.gordon@kathindincedarloghomes.com>, "Grant & Judy Jensen" <general@grantburgil.com>, "H. R. Ellis" <shelldog@peoplepc.com>, "Harold & Lynn Lassonde" <rimview_gnca.net>, "Howard Hart" <hart@esire.com>, "Howard Van Silver" <hvan@silver.com>, "Jim & Diana Belsa" <oulin@comcast.net>, "Jim & Pam Harbin" <homedepot@comcast.net>, "Jim Sicker" <ronnyloghomedepot@comcast.net>, "Jimmy & Kelly Barton" <jbarton@thehughes.com>, "Joe & Patty Hunt" <peh@hughes.com>, "Joe Whitaker" <jwhitaker@hughes.net>, "John & Chris Bessiole" <cb@hughes.com>, "John & Peggy Reddick" <pegr@hughes.com>, "Kathy Barton" <kathybarton@whnng.com>, "Ken & Corina Lauer" <lauer@cedarloghomes.com>, "Ken Meeker" <meeker@cedarloghomes.com>, "Larry & Joy Carls" <carls@cedarloghomes.com>, "Larry Pacer" <lpacer@maine.com>, "Lee Hyatt" <hyatt@cedarloghomes.com>, "Lore & Peggy Reddick" <pegr@hughes.com>, "Mark & Theresa McKnight" <loghomes@bryant.net>, "Marydean Muck" <katshindv7@aol.com>, "Matt & Kim Rohrer" <cmr@cedarloghomes.com>, "Michael Carlson" <cmcarlson@comcast.net>, "Michael Finstrom" <mfinstrom@aol.com>, "Mike & Chris Dunning" <swadob@cedarloghomes.com>, "Mike & Kim Strada" <loghomes@earthlink.net>, "Murray Cunningham" <murraycunningham@comcast.net>, "Pat & Judy Keim" <P&J_Keim@aol.com>, "Paul McCoy" <smccoy@cedarloghomes.com>, "Randy Schuler" <rschuler@cedarloghomes.com>, "Ray & Suze Champ" <scamp@cedarloghomes.com>, "Rob Decker" <rob@cedarloghomes.com>, "Robert Stiff" <stiff@cedarloghomes.com>, "Robin Clark" <robin@kathindincedarloghomes.com>, "Ron & Lisa Zappo" <liz.zappo@jps.com>, "Scott & Josi Alender" <scottalender@comcast.net>, "Steve Deaton" <stevend@loghomes.com>, "Steve Howler" <showler@cedarloghomes.com>, "Steve Moore" <smoore@hughes.net>, "Steve Wallin" <swallin@cedarloghomes.com>, "Steve Wolk" <swolk131@verizon.net>, "Terry Dudley" <tdudley@cedarloghomes.com>, "Tom & Barbara Gasler" <katshindv7@comcast.net>, "Tom & Valerie Webb" <vwebb@cedarloghomes.com>, "Tommy Mitchell" <tommy@cedarloghomes.com>, "Tony Guarente" <tonyg@cedarloghomes.com>, "Vincent Ritchie" <vritchie@aol.com>, "William & Maria Gray" <classiccedarloghomes@gmail.com>, "Wm & Barbara Gasler" <katshindv7@comcast.net>, "David Gordon" <gabe.gordon@kathindincedarloghomes.com>, "Paul Dwyer" <pdwyer@kathindincedarloghomes.com>, "Betsy Hery" <betsy@kathindincedarloghomes.com>, "Shaaron Herry" <shaaron@kathindincedarloghomes.com>, "Jim Lyons" <jim.lyons@kathindincedarloghomes.com>, "Tony G" <tonyg@kathindincedarloghomes.com>

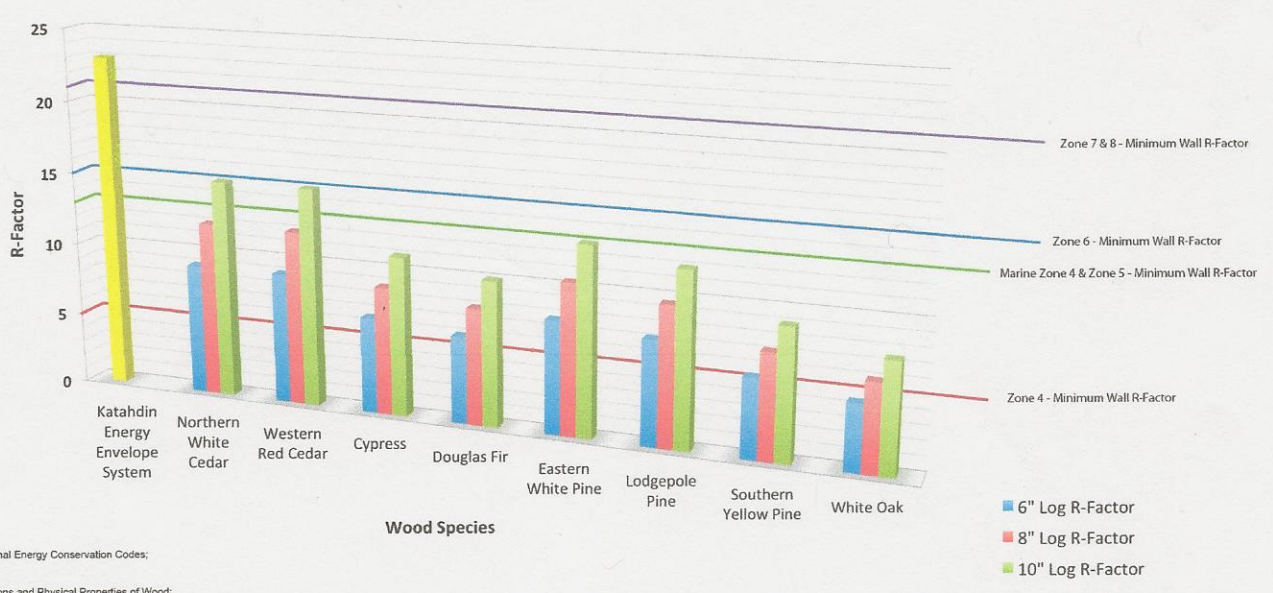
Good Afternoon, All,
 As the 2013 winter/spring home show season ramps up, one thing is for certain - we're going to continue hearing lots of opinions and engaging in discussions about energy codes, R-factor and Thermal Mass. And, as we all know, much of the information coming from our competitors will be made believe with varying degrees of truth sprinkled in. However, I do have some great news on this front! Recently, the United States Department of Energy has expanded their "Energy Efficiency in Log Homes" article to include thermal mass and the effect it has on log homes. And, wouldn't you know it, it completely confirms what we have been saying for years! According to the Dept. of Energy, thermal mass has a beneficial effect north of the 40° parallel (think Philadelphia) and such a minimal effect south of the 40° parallel that it would take a 10" thick log just to add 1 R-factor.
 The best way for us to combat the misinformation problem - and engage customers who have been exposed to this nonsense - is to meet head-on with hard facts and scientific data from credible, disinterested third parties. I have put together the attached information specifically to quell the hearsay surrounding this issue, especially the effect that thermal mass has on energy efficiency. This attached information all comes from third parties and includes source citations where necessary. Descriptions of each piece are below.

1. DOE_log_homes.pdf
 I created a pdf version of the Energy.gov article on "Energy Efficiency in Log Homes." This is the article mentioned above where the US Dept. of Energy discusses the R-value of wood, Thermal Mass, and also lists the best species of wood for minimizing air leakage (per inch). You can view the original article here: http://energy.gov/eere/energy_efficiency_in_log_homes
2. R-Factor of Wood by Thickness
 This graph shows the R-factor of 6", 8" and 10" thick logs for a variety of wood species. The graph also shows the minimum wall R-factor requirements needed to 2009 IECC.
3. R-Factors and Thermal Mass
 This statement shows the R-factors of 6", 8" and 10" thick logs for the different wood species WITH the added benefit of thermal mass factor. This is only representative of some temperate areas south of the 40° parallel that receive dramatic temperature swings from day to night (significantly higher than indoor temperature during the day and significantly lower than indoor temperature at night). Essentially, thermal mass only has a measurable effect in parts of IECC Zones 1 - 6. Thermal mass does not provide any benefit north of the 40° parallel in the US, as well as in many non-tropical areas south of the 40° parallel.
4. Wood Handbook Chapter 4
 Chapter 4 of the Wood Handbook deals with the physical properties of wood, including Thermal Resistivity (R-factor). Table 4-7, located on pages 13 and 14, display the R-factor per inch of each species of wood. This figure is located in parenthesis under "Resistivity" in the "12% MC" column. It is the figure on the far right of the page.

I hope this information is helpful. Please do not hesitate to contact me with any questions or feedback that you may have.
 Best,
 Gabe

Gabe Gordon
 Marketing Manager
 Kathindin Cedar Log Homes
 82 Main St.
 Kennebunk, ME 04043
 (207) 467-7015 p
 (207) 907-5028 m
www.kathindincedarloghomes.com

R-Factor of Wood Species by Log Thickness



Sources:
 2009 International Energy Conservation Codes;
 Table 402.1.1
 Moisture Relations and Physical Properties of Wood;
 The Wood Handbook 2010; p. 4-13

Attachments:
 DOE_log_homes.pdf 234 KB
 Rfactors_thickness.jpg 863 KB
 Rfactor_thermalMass.pdf 1.0 MB
 WoodHandbook_chapter_04.pdf 1.0 MB