

## Colorado Jurisdictional Energy Code Understanding Survey

Survey created and sent by Shaunna Mazingo, City of Westminster – January 2010

50 Jurisdictions surveyed, 21 responded.

### RESULTS

#### **Which addition of the Energy Code have you adopted?**

- 2003 IECC - 3 Jurisdictions
- 2004 Supplement - 1 Jurisdiction
- 2006 IECC/IRC - 11 Jurisdictions
- 2009 IECC – 5 Jurisdictions
- We wrote our own – 1 Jurisdiction

#### **Do you ALLOW or REQUIRE ResCheck submittals? If required, are you using them for compliance with all 3 allowed paths in energy (prescriptive, UA Trade-off, Performance)?**

- Required for all 3 paths – 2 Jurisdictions
- Allowed for all 3 paths but not required – 6 Jurisdictions
- *Required for UA Trade-off only* – 6 Jurisdictions
- Don't allow ResCheck because our prescriptive codes are more stringent – 1 Jurisdiction
- Allowed sometimes but for prescriptive only – 1 Jurisdiction
- We have a performance-based sustainability amendment. ResChecks are only acceptable for projects under 500 sq. ft. – 1 Jurisdiction
- Where applicable – 1 Jurisdiction
- Allowed for UA Trade-off and Performance – 1 Jurisdiction
- UA only allowed for performance, Architect Seal Required for UA Trade-Off, we inspect prescriptive – 1 Jurisdiction
- We wrote our own code – 1 Jurisdiction

#### **Do you ALLOW or Require HERS ratings? If so, are you using them for compliance with all 3 allowed paths in energy?**

- Not allowed – 3 Jurisdictions
- Required on homes 5000 sq ft and larger – 1 Jurisdiction
- Required on all projects of 500 sq ft and larger
- *HERS for performance path only* – 6 Jurisdictions
- Allowed for all 3 paths but not required – 7 Jurisdictions
- Not for IECC Compliance, only for green code – 1 Jurisdiction
- HERS is treated like ResCheck, ok for performance but not for others. – 1 Jurisdiction
- We wrote our own code – 1 Jurisdiction

**Do you require Manual J submittals?**

- Don't right now but will when we adopt the 2009 – 2 Jurisdictions
- Yes – 11 Jurisdictions
- No – 6 Jurisdictions
- Manual J is one option, for residential only, we also accept a spreadsheet format located on our website. -1 Jurisdiction
- A computer analysis printout from the equipment manufacturer will be allowed. – 1 Jurisdiction

**If Manual J is required do you review them at time of plan review?**

- Don't right now but will when we adopt the 2009 – 2 Jurisdictions
- Yes but most homes are required to have the mechanical system engineered. – 1 Jurisdiction
- N/A – 6 Jurisdictions
- We allow Manual J submittals after issuance but before roughs. – 1 Jurisdiction
- Yes – 11 Jurisdictions

**If Manual J is required do the inspectors look at them in the field for compliance?**

- Yes – 9 Jurisdictions
- No- 4 Jurisdiction
- N/A – 6 Jurisdictions
- Don't right now but will when we adopt the 2009 – 2 Jurisdictions

**Do you require Manual D submittals?**

- Don't right now but will when we adopt the 2009 – 1 Jurisdiction
- No – 8 Jurisdictions
- Yes – 11
- No answer – 1 Jurisdiction

**If Manual D is required do you review them at time of plan review?**

- Don't right now but will when we adopt the 2009 – 1 Jurisdiction
- N/A – 8 Jurisdictions
- Yes – 6 Jurisdiction
- Allow Deferred submittals – 4 Jurisdiction
- No Answer – 1 Jurisdiction
- No – 2 Jurisdiction

**If Manual D is required do the inspectors look at them in the field for compliance?**

- Yes – 8 Jurisdictions
- No – 1 Jurisdiction
- Don't right now but will when we adopt the 2009 – 2 Jurisdictions
- N/A – 8 Jurisdictions
- No answer – 2 Jurisdictions

**Do you compare the Manual J to the ResCheck or HERS ratings?**

- Yes – 8 Jurisdictions
- No – 3 Jurisdictions
- N/A – 8 Jurisdictions
- No Answer – 2 Jurisdictions

**What type of plan review, if any, do you do for energy compliance?**

- Yes – 1 Jurisdiction
- Per 2009 IECC – 1 Jurisdiction
- Review ResCheck or HERS or if Prescriptive then check plans for compliance. 1- Jurisdiction
- Determine path, check plans for infiltration details, moisture control, duct sealing methods, review Manual J and D if submitted, ResCheck if submitted. 1 – Jurisdiction
- ResCheck, HERS, Manual J and D, insulation on print, house wrap, draft and firestop notes, windows, doors. 1 - Jurisdiction
- Full compliance with 2006 IECC for commercial and residential – 1 Jurisdiction
- Typically E-Star, ResCheck or ResNet. 1 – Jurisdiction
- Yes, and plenty of it. 1-Jurisdiction
- A third party RESNET model is required. We review the thresholds to assure it is correct for the size of the dwelling. 1-Jurisdiction.
- Review for compliance with Chapter 4, comparisons of all data submitted for consistency and code compliance – sometimes ResCheck and Manual J info don't match. 1 Jurisdiction
- Review for energy compliance, typically a 10-15 minute review. 1 Jurisdiction
- Plan review on the compliance of the Prescriptive Energy Code and Green Building Code, we look at the HERS rating. It is required on all structures over 5000 sq ft must achieve a HERS of 70 or less by a certified Home Rater. 1 Jurisdiction
- We wrote our own code and check for compliance. 1- Jurisdiction
- ResCheck and general compliance. 1 Jurisdiction
- Prescriptive plan review only 1 Jurisdiction
- Complete plan review, requiring stamped drawings and submittals. 1 jurisdiction
- None – 1 jurisdiction
- Prescriptive for both residential and commercial for the basics. We also require that the Architect provide a ComCheck report for all commercial projects. We ask for a compliance report on the lighting and hope they install accordingly but don't have time to verify lighting in field. It is given to state inspector, who isn't interested in energy compliance and I simply don't have the time. 1 Jurisdiction.

- We require Commercial projects to be reviewed and sealed by an engineer or architect for energy code compliance. 1 Jurisdiction
- Residential: Verify U-Values comply with N1102.1. Commercial: require ComCheck or equivalent. 1- Jurisdiction
- In house review. 1 Jurisdiction

**What type of inspections, if any, do you do for energy compliance?**

- Yes – 1 Jurisdiction
- Windows, air sealing, insulation, penetrations.
- Windows, air barriers, insulation, equipment
- Windows, insulation, Manual J & D
- Insulation, encapsulation, house wrap, windows and doors, duct blaster, pipes and ducts outside envelope, blown insulation and basement/crawlspace wraps
- All inspections required to verify FULL compliance with the 2006 IECC/IRC.
- Verify compliance with E-Star, ResCheck or ResNet.
- Yes and plenty of it.
- Projects with CFA of 500 sq ft or larger require 3<sup>rd</sup> party HERS inspection. When new code is adopted all projects will require 3<sup>rd</sup> party inspection. In interim we verify insulation certificate for projects under 500 sq. ft.
- Spot check windows, insulation of unconcealed areas (basements, rim joists, etc), mandatory items like thermal envelope sealing, mech systems, etc.
- Every new building or addition (residential and commercial) requires an insulation inspection. The inspection covers window and door U-Values and all insulation.
- We have a special inspection card for the Energy Code and Green Building Code.
- Full compliance with the code we wrote
- Complete
- Prescriptive requirements
- Door and window replacement and insulation with new or remodel construction.
- Ducts and insulation
- Prescriptive requirements for both residential and commercial for the basics except lighting. The state electrical inspector takes care of our electrical and he isn't interested in energy compliance and I simply don't have time.
- Visual inspection for envelope. Verification and labeling of insulation and window ratings.
- Verify compliance with N1102 and N1103 unless they go with a rating company.
- Windows, doors and insulation.

**Do you require permits for insulation?**

- No – 12 Jurisdictions
- Yes – 9 Jurisdictions

**Do you require permits for window replacement?**

- Yes – 15
- Only if Changing size – 2
- No – 3
- Commercial only, to verify safety glazing requirements. – 1

**Do you require Permits for A/C and Furnace Replacements?**

- Yes – 18
- No – 2
- We require permits for anything over \$1000.00 – 1 Jurisdiction

**Are you comfortable with your knowledge of the energy code that you have adopted?**

- Yes – 9
- No – 2
- Some what – 5
- Yes, however a fresh perspective is always helpful.
- Not entirely, always willing to learn something new.
- Prescriptive is a no brainer. Commercial can be more involved. The checklist produced require specialist in the given areas beyond the capabilities of our inspectors. Lucky for us, commercial other than simple structures are not prevalent in our areal We can ge an engineer for the few that we do have.
- Each year since we adopted the I-codes and with the trainings we attended we are more comfortable. Gil has been a great asset when we need help.

**Do you need training on the energy code that you have adopted or on one that you are about to adopt?**

- Yes, additional training is always helpful – 8
- Some would not hurt – 1
- No – 6
- No answer – 1
- We will do internal training when we adopt the next code. – 1
- We will be adopting the 2009 and I've attended a free training that was provided by the GEO but I certainly don't feel like an expert on it.
- We have had the quick review training sessions. The devil is in the details.
- Could use some inspector training on certain aspects.
- Unsure – 1

**If training were free and in your place of business would you be interested in training on energy code compliance?**

- Yes – 14
- No – 2
- No answer – 1
- Depends on timing and material covered.
- It would probably not be applicable to our jurisdiction. (and this isn't the jurisdiction that wrote their own code)
- We could always learn but we have a reasonably good handle on it.
- Already had free training but don't feel like an expert in it.

**What is/are the hardest things to understand or enforce regarding energy codes?**

- Commercial mechanical requirements
- Lighting regulations
- Air sealing
- Public's opinion of unnecessary costs involved
- Educating people that it is important
- Intent of the code
- HVAC technology, which the Code does not keep pace with
- Interpretation and consistency of enforcement
- We are getting more comfortable with Ch 11 in the IRC as time goes on. The IECC has been more challenging.
- HVAC and lighting
- The details related to commercial mechanical, water heating and electrical systems. The state does all the electrical inspections.
- Log Homes
- How much variation is acceptable from Manual D and J. Why take-off dampers are not generally required. What other "acceptable" software is out there and how to keep current with the new applications (REMdesign???)
- When to enforce certain portions of the code
- Lack of definition resulting in interpretation or mis-interpretation.
- The hardest thing to manage for me is the time required to review the Manual J, D, and S for each and every home.
- Correlation between code and ASHRAE Manual J and D
- No answer – 2 jurisdictions
- Thermal envelope, air sealing techniques
- The multiple paths of the IECC, this is why the contractors have pushed us to go prescriptive.

**What would be the most valuable tool that you could receive to help you understand and enforce the energy code?**

- More consistency between the IRC, IECC, Mechanical Code and a plan review/inspection checklist.
- Practical applications
- Independent third party inspection
- Continue to work on educating the public
- Community training
- No answer - 3
- A 2009 IECC Commentary.
- Building science training, HVAC technology, solar PV training, training on Geo Thermal and solar thermal, etc has been helpful in the past.
- Rejuvenation of my brain
- A one-on-one review of a building such as the 38,000 sq ft retail building we are starting tenant finishes in right now. Even if that review was done after the building is complete, it would be helpful. It all just seems so overwhelming when you're a one-man office enforcing all but the electrical code.
- Our own mechanical, electrical inspectors, which would not be cost effective for the number of the type of specific inspections we have in this area.
- One set of rules to follow
- What are the most critical and conversely, least important items to look at during plan review and inspections. What are the most cost effective and important things to check in the field, while being short of staff and time at each home? What of the other specific items that various jurisdictions require or perform, are vital to successful energy compliance. What other things are coming down the road (2009, 2012 codes) that we will need to educate our staff and contractors and elected officials about. What other things is the State or Feds considering to jeopardize what we already have established in the I-codes.
- Inspector training.
- DOE training and Wrightsoft or elite, Manual J & D training
- Simplified Manual J, D and S methods for plan review. Education for general contractors and their subcontractors.
- Continued training and more visual tools.
- Training
- Little extra training on sections of the IECC