

RESIDENTIAL ENERGY CODE FAQs

August 23, 2016

The following questions related to the plan review and inspection of 1- and 2- single family homes in the City of Dallas. The questions are collected from a variety of 3rd Party Energy Code Providers. As additional questions are received they will be posted on the web site.

1. Is the City of Dallas adopting the North Central Texas Council of Governments (NCTCOG) recommended amendments to the energy provisions of the 2015 Edition of the International Residential Code (IRC)?

RESPONSE: The residential provisions of the 2015 International Residential Code (IRC) are adopted as the state residential energy code effective September 1, 2015 by HB 1736. That bill also amended the *Energy Rating Index* (ERI) numbers. The City of Dallas will adopt the 2015 family of the "I" codes effective January 1, 2017 and will adopt the recommended NCTCOG amendments to the energy provisions of the IRC. In the interim the City of Dallas will recognize the NCTCOG recommended amendments to energy provisions of the IRC effective September 1, 2015.

2. The 2015 IECC R103.2 requires some specific documents for plan submission. I have the form you have provided for use with the city of Dallas. Will their plans submitted to you require an outline of the Building Envelope, list of the insulation materials and their R values, U and SHGC values, Manual J & S, Mechanical and Water heating system efficiencies, duct sealing details and duct locations and air sealing details, or will you rely solely on their submissions to us and the generation of COD Residential Energy Compliance Path document as evidence that they have submitted those details to us? (R103.2)

RESPONSE: The review and approval of the energy related construction documents is a responsibility of the City of Dallas 3rd Party Energy Provider. The City of Dallas will not require energy code related items to be provided on the construction documents provided to the City for building permit application.

3. Will The COD be perform any inspections regarding insulated buried plumbing, or will you be relying on us to perform that inspection? (R104.2) Increased inspections on the property will result in increased fees and your inspectors could easily check this detail when performing their foundation inspections.

RESPONSE: No, the COD does not perform any energy related inspections. All energy related inspections are the responsibility of the City of Dallas 3rd Party Energy Provider.

4. An air barrier is defined by the Air Barrier Association of America (ABAA) and references the ASTM E2357 standard as less than .04 CFM @75 PA. Sheetrock with ceiling paint may not readily meet this standard. Are we to consider sheetrock as an acceptable air barrier for ceilings and

just require all penetrations sealed with caulk or gaskets? (Table 402.4.1.1) Also Open Cell Poly Urethane foam is not considered an Air Barrier. Closed Cell Poly Urethane Foam does meet the Air Barrier Standard but is not widely used in this area. Should we consider the roof assembly (which may or may not have 40 lbs felt under the shingles and is considered an adequate air barrier) as sufficient to meet the Air Barrier requirement in this area? Same question for Exterior walls. Should the wall assembly with open cell foam be considered an adequate air barrier. The problem with going outside the defined air barrier requirements using specific materials may result in noncompliance with the Blower Door test and ACH requirement. We are concerned that adopting lower air barrier standards will result in the inability to meet the ACH testing requirements and lower energy efficiencies. You can refer to the American Air Barrier Association website for more information at https://www.airbarrier.org/materials/assemblies_e.php

RESPONSE: *Air Barrier* is defined in the 2015 IECC and IRC as follows: “*Material(s) assembled and joined together to provide a barrier to air leakage through the building envelope. An air barrier may be a single material or a combination of materials.*” Neither AABA or ASTM E2357 is listed in the Referenced Standards Chapter of the IECC or IRC. The City of Dallas recognizes the definition of *air barrier* contained in the IECC and the IRC.

5. Must the material with R-3 /inch thermal resistance to be used in door and window headers on exterior walls be continuous or are Foam spacers between the 2X materials considered acceptable? (Table 402.4.1.1)

RESPONSE: The text in the table reads “*Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of R-3 per inch minimum.*” Foam spacers do not satisfy the requirement of being completely filled.

6. On residences with concealed sprinkler heads in the upper floor ceiling where the ceiling is the building thermal envelope, The Fire Marshal general does not want these gaps between the sheetrock and the sprinkler head sealed with caulk for fire safety reasons. When performing the Blower Door test, these open areas can dramatically affect the ACH reading for the structure (Prescriptive path or the ESL 4 ACH path) and result in noncompliance. Do you have an adjust procedure to account for the large unsealed holes in the building envelope (if the structure is not foam encapsulated)? One such method would be calculating the EFLA (Effective Leak Area) size of the aggregate number of holes in the ceiling for the sprinkler heads and then applying a percentage basis adjustment to the ACH number to determine compliance. An example could be an ACH reading of 3.25 with an EFLA number of 390 square inches and 10 penetrations for sprinkler system heads on the top floor. Considering the sprinkler escutcheon head opening to be 2.5 inches would result in 3.9 square inches per head X 10 heads for 39 square inches in opening size for these assemblies. The 39 square inches is 10% of the total EFLA so if a 10% adjustment factor was applied to the ACH reading then the adjusted reading would be 2.95 and the house would comply. Any guidance would help with the testing and help make house comply if they have concealed sprinkler systems.

RESPONSE: The better approach would be temporarily sealing of the fire sprinkler penetrations in the thermal envelope being careful not to damage any of the sprinkler heads. Tape and light weight plastic sheeting should provide a good method of temporary sealing the openings. This

eliminates any chances of error in making the calculations and adjustments. After completion of the leakage testing, the plastic and tape must be removed.

7. On the new City of Dallas form, if Option #5 is selected (ESL NCTCOG Tradeoff), will a RESCheck™ or IC3 report still need to be generated to show compliance with the Energy Code? If so, which report will be accepted?

RESPONSE: The ESL NCTCOG Tradeoff will stand on its own merits. There is not a report to show compliance. The City of Dallas Residential Energy Compliance Path from asks only for the "appropriate compliance option compliance report."

8. The residential provisions of the IRC state that blower door testing "where required by the code official". I assume that the "code official" in Dallas will be requiring blower door testing?

RESPONSE: The Air Leakage testing is a *Mandatory* code requirement. In Section N1102.4.1.2, part of the section reads "Where required by the *code official*, testing shall be conducted by an *approved* third party." This section means that only an individual with the proper training and credentials can perform the test and sign the compliance form with the results.

9. The IECC states (and the COD form states) that certain Energy Code items (R values, U factor, SHGC, etc., etc.) must be listed on the plans. Will the City of Dallas require this information to be listed on the plans?

RESPONSE: The Energy Code provider is responsible for reviewing plans and construction documents to determine compliance with the energy provisions of the IRC. The City of Dallas is not changing any of the information that will be required to be submitted to the City with the permit application.

10. Will additional Energy Compliance Contractor Numbers need to be provided for the 3rd party reviews, blower door testing and duct testing?

RESPONSE: The City of Dallas *Residential Energy Compliance* form has signature blocks for

- 1) the individual performing the duct leakage testing,
- 2) the individual performing the building thermal envelope leakage testing,
- 3) the individual certifying options 2-4 and
- 4) the individual stating overall compliance.

Items 1 and 2 listed above must be completed by the individual with the proper training and credentials for the specific tests.

Items 3 and 4 listed above must be signed by an *Energy Code Provide* that is registered with the City of Dallas. They may or may not be the same individual. The individual signing item 4 must be certified as a residential inspector as required by statutes.

11. Should we provide a copy of our RTIN Number to the city of Dallas for verification of credentials for the duct testing and blower door?

RESPONSE: No, the individuals need only sign the City of Dallas *Residential Energy Compliance* form.