



**ICYNENE** INC.

6747 Campobello Rd., Mississauga, Ontario, L5N 2L7, Canada  
Tel: 905.363.4040 Toll Free: 800.758.7325 Fax: 905.363.0102

April 22, 2005

Environmental Protection Agency  
Energy Star Program  
1200 Pennsylvania Avenue, N.W.  
6202J  
Washington, DC 20460

Attention: Mr. Samuel D. Rashkin

Re: ENERGY STAR Qualified Homes (DRAFT 2/8/05)

This is an excellent draft, moving in the right direction to produce significant energy savings.

We have reviewed the above-mentioned draft, and want to provide our comments. We feel that the draft is based on the performance of air permeable insulation materials. Spray foam insulation provides an air seal to the building envelope and as a result the design parameters can be different.

Spray foams are rapidly expanding into the market place and are used in increasing volume and different applications.

Allowance for superior energy performance as a result of air seal capability needs to be recognized. We have provided the following recommendations to address this.

Thermal Bypass Inspection Checklist:

2. Insulated Floor above Garage:
  - a. We suggest that the statement be changed to: "The insulation shall be installed to maintain permanent contact with the underside of the sub-floor decking." This wording is included within the IECC 402.2.5.

## National Specifications:

### Envelope

The minimum air infiltration rate is 0.35 ACHn within IECC. However sprat foam insulation materials are able to achieve minimum levels of 0.10 ACHn. Values lower than 0.35 should be allowed where confirmation by blower door testing has been provided.

#### 1. Attic/Ceiling Interface:

- 1.11 We suggest that this statement be added:” In conditioned attic assemblies there is no insulation at the ceiling level. Recessed lights do not need to be sealed.”
- 1.12 In conditioned attic assemblies the air barrier is already provided by the spray foam insulation material. There should be no air barrier between the attic and the occupied space.

#### 2. Water Managed Foundations:

- 1.14 If spray foam insulation is used no additional sealing is required.
- 1.18 Vented crawl spaces shall have air impermeable insulation adhered directly to the underside of the floor of the conditioned space. Where high humidity exists within the crawl space, a vapor retarder system may be required on the underside of the insulation.

#### 2 HVAC Systems Required Measures:

- 4.11 The maximum sensible heat ratio (SHR) of 0.7 in hot humid climates is on the low side. This may result in short cycling and moisture build up within the structure. This recommendation requires further review.

3 Combustion Venting Systems required measures

Garage Isolation:

5.3 Where spray foam insulation is used no further air sealing is required.

If you require further information please do not hesitate to contact the writer.

Yours truly,

Ed Reeves, P. Eng.  
Engineering Manager