
### Air Barrier Systems - NBC, ABC, BCBC and OBC Subsection 9.25.3.

**Article 9.25.3.1.** – Thermally insulated wall assemblies shall be constructed so as to include an air barrier system that will provide a continuous barrier to air leakage.

**Sentence 9.25.3.2.(1)** – Air barrier systems shall possess the characteristics necessary to provide an effective barrier to air infiltration and exfiltration under differential air pressure due to stack effect, mechanical systems or wind.

**OBC Sentence 9.25.3.2.(1) and NBC, ABC, BCBC and OBC Sentence 5.4.1.2.(1)** – Sheet and panel type materials intended to provide the principal resistance to air leakage shall have an air leakage characteristic not greater than 0.02 L/(s•m²) @ 75 Pa.

**Advantage ICF System properties in relation to Code Requirements:**

ABC and OBC Table A-9.25.1.2.B – The air leakage characteristic for 25-mm thick CAN/ULC-S701, type 2 expanded polystyrene (EPS) insulation is listed as 0.0214 L/(s•m²) @ 75 Pa.

**NBC and BCBC Table A-9.25.5.1.(1)** - The air leakage characteristic for 50-mm reinforced concrete is listed as “negligible.”

Based upon the above, either the two 67-mm (2-5/8”) thick layers of CAN/ULC-S701, Type 2 EPS insulation or the minimum 152 mm (6”) thick monolithic concrete core provided by the Advantage ICF System would satisfy the required air leakage characteristic of less than 0.02 L/(s•m²) @ 75 Pa.

### Vapour Barrier Systems – NBC, ABC, BCBC and OBC Subsection 9.25.4.

**Article 9.25.4.1.** – Thermally insulated walls must be constructed with a vapour barrier so as to provide a barrier to diffusion of water vapour from the interior into wall spaces.

**Sentence 9.25.4.2.(1)** – The material providing the vapour barrier property must have a permeance not greater than 60 ng/(Pa•s•m²) when measured using ASTM E96, desiccant method (dry cup).

**NBC and BCBC Sentence 9.25.4.2.(6)** – Where foamed plastic insulation functions as the vapour barrier, it shall be sufficiently thick so as to meet the requirement of Sentence (1).

**Advantage ICF System properties in relation to Code Requirements:**

The vapour permeance characteristic for each 67-mm (2-5/8”) thick EPS insulation panel that form the concrete wall in the Advantage ICF System is less than 60 ng/(Pa•s•m²) which meets the requirements per NBC 2010, Sentence 9.25.4.2.(6). In addition, NBC and BCBC Table A-9.25.5.1.(1) lists the vapour permeance for 50-mm reinforced concrete as 23 ng/(Pa•s•m²).

**Note:** In order to meet code provisions for air and vapour barrier systems, continuity must be maintained at all openings in walls and at floor/roof connection using approved sealing materials.