

## Chapter 8 – Thermal Performance

Table 8-4 Colorado and southern Wyoming – prescriptive energy code compliance values for opaque above-grade wall systems within this guide

| Opaque Above-Grade Wall – Thermal Envelope Requirements |                              |                        |                              |                              |                              |   |   |   |   |   |                                 |                                 |                              |                              |
|---|------------------------------|------------------------|------------------------------|------------------------------|------------------------------|---|---|---|---|---|---------------------------------|---------------------------------|------------------------------|------------------------------|
|   |                              | Energy Code            | 2012 IECC                    |                              |                              |   |   |   |   |   |                                 |                                 | 2015 IECC                    |                              |
|   |                              | Climate Zone           | 4B                           |                              | 5B                           |   | 6B  |   | 7B  |   | 8B                              |                                 | 4B                           |                              |
| Guide Assembly Type                                     |                              | Classification         | All Other                    | Group R                      | All Other                    | Group R                                   | All Other                                 | Group R                                   | All Other                                 | Group R                                   | All Other                       | Group R                         | All Other                    | Group R                      |
| Anchored<br>Masonry Veneer                              | CMU<br>(or Concrete)<br>Wall | Mass                   | R-9.5ci                      | R-11.4ci                     | R-11.4ci                     | R-13.3ci                                  | R-13.3ci                                  | R-15.2ci                                  | R-15.2ci                                  | R-15.2ci                                  | R-25ci                          | R-25ci                          | R-9.5ci                      | R-11.4ci                     |
|   |                              |                        | U-0.104<br>(R-9.6)           | U-0.090<br>(R-11.1)          | U-0.078<br>(R-12.8)          | U-0.078<br>(R-12.8)                       | U-0.078<br>(R-12.8)                       | U-0.071<br>(R-14.1)                       | U-0.061<br>(R-16.4)                       | U-0.061<br>(R-16.4)                       | U-0.061<br>(R-16.4)             | U-0.061<br>(R-16.4)             | U-0.104<br>(R-9.6)           | U-0.090<br>(R-11.1)          |
|   | Steel<br>Stud-Framed<br>Wall | Metal-Framed           | R-13 +<br>R-7.5ci            | R-13 +<br>R-7.5ci            | R-13 +<br>R-7.5ci            | R-13 +<br>R-7.5ci                         | R-13 +<br>R-7.5ci                         | R-13 +<br>R-7.5ci                         | R-13 +<br>R-7.5ci                         | R-13 +<br>R-15.6ci                        | R-13 +<br>R-7.5ci               | R-13 +<br>R-17.5ci              | R-13 +<br>R-7.5ci            | R-13 +<br>R-7.5ci            |
|   |                              |                        | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)                       | U-0.064<br>(R-15.6)                       | U-0.057<br>(R-17.5)                       | U-0.064<br>(R-15.6)                       | U-0.052<br>(R-19.2)                       | U-0.045<br>(R-22.2)             | U-0.045<br>(R-22.2)             | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)          |
|   | Wood-Framed<br>Wall          | Wood-Framed<br>& Other | R-13 +<br>R-3.8ci or<br>R-20 | R-13 +<br>R-3.8ci or<br>R-20 | R-13 +<br>R-3.8ci or<br>R-20 | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-15.6ci or<br>R-10ci | R-13 +<br>R-15.6ci or<br>R-10ci | R-13 +<br>R-3.8ci or<br>R-20 | R-13 +<br>R-3.8ci or<br>R-20 |
|   |                              |                        | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)                       | U-0.051<br>(R-19.6)                       | U-0.051<br>(R-19.6)                       | U-0.051<br>(R-19.6)                       | U-0.051<br>(R-19.6)                       | U-0.036<br>(R-27.8)             | U-0.036<br>(R-27.8)             | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)          |
| Single-Wythe<br>CMU                                     | Interior-<br>Insulated       | Mass                   | R-9.5ci                      | R-11.4ci                     | R-11.4ci                     | R-13.3ci                                  | R-13.3ci                                  | R-15.2ci                                  | R-15.2ci                                  | R-15.2ci                                  | R-25ci                          | R-25ci                          | R-9.5ci                      | R-11.4ci                     |
|   |                              |                        | U-0.104<br>(R-9.6)           | U-0.090<br>(R-11.1)          | U-0.078<br>(R-12.8)          | U-0.078<br>(R-12.8)                       | U-0.078<br>(R-12.8)                       | U-0.071<br>(R-14.1)                       | U-0.061<br>(R-16.4)                       | U-0.061<br>(R-16.4)                       | U-0.061<br>(R-16.4)             | U-0.061<br>(R-16.4)             | U-0.104<br>(R-9.6)           | U-0.090<br>(R-11.1)          |

ci= continuous insulation

# Chapter 8 – Thermal Performance

## Opaque Above-Grade Wall – Thermal Envelope Requirements (continued)

| 2015 IECC (continued)        |   |   |   |   |   |   |   | 2018 IECC                    |                              |                              |   |   |   |   |   |   |   |
|------------------------------|---|---|---|---|---|---|---|------------------------------|------------------------------|------------------------------|---|---|---|---|---|---|---|
| 5B                           |   | 6B  |   | 7B  |   | 8B  |   | 4B                           |                              | 5B                           |   | 6B  |   | 7B  |   | 8B  |   |
| All Other                    | Group R                                   | All Other                                 | Group R                                   | All Other                                 | Group R                                   | All Other                                 | Group R                                   | All Other                    | Group R                      | All Other                    | Group R                                   | All Other                                 | Group R                                   | All Other                                 | Group R                                   | All Other                                 | Group R                                   |
| R-11.4ci                     | R-13.3ci                                  | R-13.3ci                                  | R-15.2ci                                  | R-15.2ci                                  | R-15.2ci                                  | R-25ci                                    | R-25ci                                    | R-9.5ci                      | R-11.4ci                     | R-11.4ci                     | R-13.3ci                                  | R-13.3ci                                  | R-15.2ci                                  | R-15.2ci                                  | R-15.2ci                                  | R-25ci                                    | R-25ci                                    |
| U-0.090<br>(R-11.1)          | U-0.080<br>(R-12.5)                       | U-0.080<br>(R-12.5)                       | U-0.071<br>(R-14.1)                       | U-0.071<br>(R-14.1)                       | U-0.061<br>(R-16.4)                       | U-0.061<br>(R-16.4)                       | U-0.061<br>(R-16.4)                       | U-0.104<br>(R-9.6)           | U-0.090<br>(R-11.1)          | U-0.090<br>(R-11.1)          | U-0.080<br>(R-12.5)                       | U-0.080<br>(R-12.5)                       | U-0.071<br>(R-14.1)                       | U-0.071<br>(R-14.1)                       | U-0.061<br>(R-16.4)                       | U-0.061<br>(R-16.4)                       | U-0.061<br>(R-16.4)                       |
| R-13 +<br>R-7.5ci            | R-13 +<br>R-7.5ci                         | R-13 +<br>R-7.5ci                         | R-13 +<br>R-7.5ci                         | R-13 +<br>R-7.5ci                         | R-13 +<br>R-15.6ci                        | R-13 +<br>R-7.5ci                         | R-13 +<br>R-17.5ci                        | R-13 +<br>R-7.5ci            | R-13 +<br>R-7.5ci            | R-13 +<br>R-7.5ci            | R-13 +<br>R-7.5ci                         | R-13 +<br>R-7.5ci                         | R-13 +<br>R-7.5ci                         | R-13 +<br>R-7.5ci                         | R-13 +<br>R-15.6ci                        | R-13 +<br>R-7.5ci                         | R-13 +<br>R-17.5ci                        |
| U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)                       | U-0.064<br>(R-15.6)                       | U-0.057<br>(R-17.5)                       | U-0.064<br>(R-15.6)                       | U-0.052<br>(R-19.2)                       | U-0.045<br>(R-22.2)                       | U-0.045<br>(R-22.2)                       | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)                       | U-0.064<br>(R-15.6)                       | U-0.064<br>(R-15.6)                       | U-0.064<br>(R-15.6)                       | U-0.052<br>(R-19.2)                       | U-0.064<br>(R-15.6)                       | U-0.045<br>(R-22.2)                       |
| R-13 +<br>R-3.8ci or<br>R-20 | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-15.6ci or<br>R-20 +<br>R-10ci | R-13 +<br>R-15.6ci or<br>R-20 +<br>R-10ci | R-13 +<br>R-3.8ci or<br>R-20 | R-13 +<br>R-3.8ci or<br>R-20 | R-13 +<br>R-3.8ci or<br>R-20 | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-7.5ci or<br>R-20 +<br>R-3.8ci | R-13 +<br>R-15.6ci or<br>R-20 +<br>R-10ci | R-13 +<br>R-15.6ci or<br>R-20 +<br>R-10ci |
| U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)                       | U-0.051<br>(R-19.6)                       | U-0.051<br>(R-19.6)                       | U-0.051<br>(R-19.6)                       | U-0.051<br>(R-19.6)                       | U-0.036<br>(R-27.8)                       | U-0.036<br>(R-27.8)                       | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)          | U-0.064<br>(R-15.6)                       | U-0.051<br>(R-19.6)                       | U-0.051<br>(R-19.6)                       | U-0.051<br>(R-19.6)                       | U-0.051<br>(R-19.6)                       | U-0.036<br>(R-27.8)                       | U-0.036<br>(R-27.8)                       |
| R-11.4ci                     | R-13.3ci                                  | R-13.3ci                                  | R-15.2ci                                  | R-15.2ci                                  | R-15.2ci                                  | R-25ci                                    | R-25ci                                    | R-9.5ci                      | R-11.4ci                     | R-11.4ci                     | R-13.3ci                                  | R-13.3ci                                  | R-15.2ci                                  | R-15.2ci                                  | R-15.2ci                                  | R-25ci                                    | R-25ci                                    |
| U-0.090<br>(R-11.1)          | U-0.080<br>(R-12.5)                       | U-0.080<br>(R-12.5)                       | U-0.071<br>(R-14.1)                       | U-0.071<br>(R-14.1)                       | U-0.061<br>(R-16.4)                       | U-0.061<br>(R-16.4)                       | U-0.061<br>(R-16.4)                       | U-0.104<br>(R-9.6)           | U-0.090<br>(R-11.1)          | U-0.090<br>(R-11.1)          | U-0.080<br>(R-12.5)                       | U-0.080<br>(R-12.5)                       | U-0.071<br>(R-14.1)                       | U-0.071<br>(R-14.1)                       | U-0.061<br>(R-16.4)                       | U-0.061<br>(R-16.4)                       | U-0.061<br>(R-16.4)                       |