Air and thermal control layers manage heat flow across the building enclosure, influencing the amount of energy and fuel required to heat and cool a building and affecting occupant thermal comfort and condensation risk. Chapter 3 discusses the basic function of the air and thermal control layers.

In Colorado and southern Wyoming, air control layer performance requirements and the thermal performance of opaque above-grade wall assemblies (e.g., masonry wall systems) is governed by locally adopted energy codes. Thus, this chapter discusses basic the air and thermal control layer in the context of energy code compliance requirements for whole-building air leakage and thermal performance, specifically conductive heat flow, of masonry wall systems. At the end of this chapter are design tables that may be used to estimate the thermal performance of typical masonry systems and their components.

## Governing Energy Codes

In Colorado and southern Wyoming, building codes are adopted and enforced at the local level. While there is no statewide energy code, legislation passed in Colorado in 2007[1] set the 2003 International Energy Conservation Code (IECC)[2] as the minimum-required energy code for all jurisdictions in the state that have adopted building codes. In jurisdictions where no building codes have been adopted, the state requires that hotels, motels, and multifamily buildings[3] conform to the 2015 IECC.[4] In addition, factory-built structures[5] are required to conform to the minimum requirements of the 2009 IECC[6] where the locally adopted code is less stringent than the 2012 IECC.[7] Public buildings are required to conform to the 2015 IECC[4] statewide.

Most larger jurisdictions within Colorado have adopted the 2009,[6] 2012,[7] or 2015 IECC,[4] and several of these jurisdictions have enacted local amendments to the governing version of the IECC. This guide addresses some of these amendments; however, the Designer of Record is responsible to refer to code amendments of the authority having jurisdiction on a project-specific basis. Additionally, this guide references general 2018 IECC requirements, which have not yet been enacted by any jurisdiction at the time of publication.

Table 8-1 summarizes the governing energy codes for various jurisdictions within Colorado and southern Wyoming at the time of publication. Refer to the Colorado Department of Local Affairs website for the current IECC adoptions by county.[9] In general, these energy codes address the *minimum* requirements for both the air and thermal control layers of the opaque above-grade wall systems.

*Table 8-1 Summary of governing energy codes for jurisdictions in Colorado and southern Wyoming*

| Jurisdiction | Governing Energy Code |
|---|---|
| City and County of Denver | 2016 Denver Building and Fire Code based on the 2015 IECC with amendments[10] |
| City of Fort Collins | 2015 IECC with amendments[11] |
| County of Boulder | 2015 Boulder County Building Code Amendments based on the 2015 IECC with amendments[12] |
| City of Boulder | 2017 City of Boulder Energy Conservation Code (COBECC), based on 2012 IECC with amendments[13] |
| County of Arapahoe | Energy Conservation Code of Arapahoe based on 2009 IECC with amendments[14] |
| City of Arvada | Code of the City of Arvada, Colorado based on 2015 IECC with amendments[15] |
| City of Aurora | City Code of Aurora, Colorado based on 2015 IECC with amendments[16] |
| County of Jefferson | The 2015 Jefferson County Building Code Supplement based on 2015 IECC without amendments[17] |
| City of Lakewood | Lakewood Building Code based on 2015 IECC with amendments[18] |
| County of Larimer | County of Larimer, Colorado Amendments to the 2015 IECC with amendments[19] |
| City of Cheyenne | 2009 IECC[6] |
| City of Laramie | 2012 IECC[7] |