



High Performance Masonry: Sustainability through quality assurance practices

High performing masonry buildings take a holistic approach to improving upon existing standards of performance by carefully integrating requirements for moisture, thermal and movement management. Buildings that perform best over time have successfully integrated all measures of performance into exterior and interior design details and have specified single source responsibility to assure quality construction.

Building Performance is based on:

- Thermal Resistance
- Thermal Mass
- Moisture Tolerance
- Airtightness
- Sustainable Details and Materials

Masonry materials uniquely assist with the thermal requirements in all buildings. Inherent thermal mass characteristics found in masonry materials serve to reduce thermal transfer through conduction and heat absorption characteristics. For maximum results related to HVAC demands, locate masonry materials inside of the insulated envelope. Design solutions that best address peak loads in a building include interior masonry partitions as well as tile and terrazzo flooring. These design elements serve to absorb excess internal loads from people, lighting and equipment and assist with overall HVAC demand.

ASHRAE 90.1 recognizes mass construction and reduces insulation requirements on mass walls.

- ASHRAE 90.1 Prescriptive tables provide information for insulation R-Value and also assembly U-Factor.
- Designers should consider the option of incorporating all of the benefits of the assembly and design for a minimum U-Factor.
- Balancing fenestration locations with thermal mass provides an optimal use of materials and addresses energy management.

Moisture management whether through the control of precipitation, air leakage, vapor diffusion, or capillary suction requires proper detailing and installation of flashing and air barrier systems that work integrally with all building interfaces.

Single source responsibility for a masonry building by a skilled masonry contractor provides the best quality assurance control. Specifying installers that have proper training and certification in all component systems completes the high performing building package.

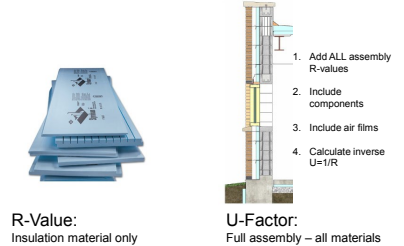


Building's Performance is based on:

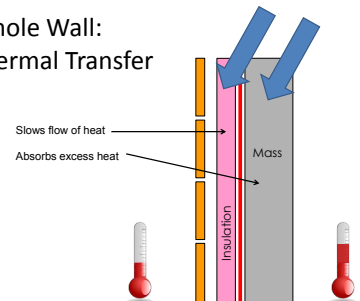
1. R-value
2. Thermal Mass
3. Airtightness
4. Moisture Tolerance
5. Sustainability Measures

Single Source Responsibility improves quality assurance for ALL Masonry Crafts

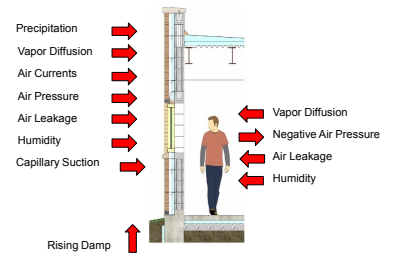
ASHRAE 90.1 measures



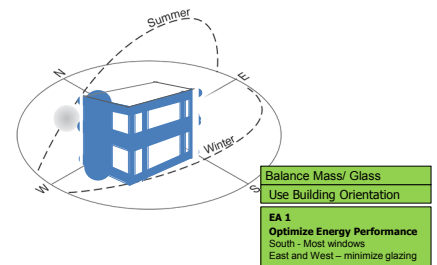
Whole Wall:
Thermal Transfer



Sources of Moisture



Thermal Mass and Glazing



International
Masonry Institute
17101 Science Drive
Bowie, M.D. 20715
phone 301.291.2124
fax 301.291.2107
toll free 800.803.0295
www.imiweb.org

Masonry Hotline
800.IMI.0988
(800.464.0988)
masonryquestions@imiweb.org

Training Hotline
800.JOBS.IMI
(800.562.7464)
training@imiweb.org



Performance = Building science + Material science + Constructability.
Focus on Entire Wall Assembly for cost effective solutions.