

A construction worker in silhouette is shown using a hammer on a wooden frame. The worker is wearing a hard hat and safety glasses. The background features a sunset sky with a bright sun low on the horizon, casting a warm glow over the scene. The wooden frame consists of various beams and joists, some of which are being worked on by the worker.

Washington State Energy Code

Builder's Field Guide

2009 / 8th Edition

WASHINGTON STATE UNIVERSITY
 **EXTENSION ENERGY PROGRAM**

www.energy.wsu.edu



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For use with the 2009 Washington State Energy Code.
Applies to all building permits issued on or after January 1, 2011.

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905 Plum Street SE, Building 3, P.O. Box 43165
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Introduction

The 8th edition of the *Builder's Field Guide* outlines acceptable construction practices that meet the 2009 *Washington State Energy Code* (WSEC).

The current edition of the WSEC was adopted effective January 1, 2011. The Code applies to all building jurisdictions in the State for residential construction. For non-residential construction, the code applies everywhere in the state, except Seattle, where municipal versions of the code have been adopted.

The *Builder's Field Guide* covers only residential practices and requirements. A similar guide for non-residential buildings is available from the Northwest Energy Efficiency Council. www.neec.net

The Guide is available online in an effort to provide broad access and to reduce paper consumption. The online version of the Guide is provided to the public free of charge, and all users may print out copies as necessary. You may also want to consider downloading the electronic version of the WSEC, also available online. The *Builder's Field Guide*, and the WSEC can be downloaded from www.energy.wsu.edu/code See the copyright notice on the back side of the title page.

Code Review Process

These codes, and all Washington State Building Codes, are developed by the Washington State Building Code Council (SBCC). The SBCC oversees a public process that reviews all codes. The building community, utilities, local government, and state agencies participate in the public process through technical advisory groups organized around each code. The WSEC is updated every three years.

If you are interested in participating in the next code review process, please contact the SBCC at (360) 725-2966 or go to <https://fortress.wa.gov/ga/apps/sbcc/default.aspx>.

While the practices included in this Guide are generally acceptable for Code compliance, your local building official has the final say as to what meets code in specific applications. Alternative practices not illustrated may be acceptable, but must be approved by the local jurisdiction.

The illustrations contained in this Guide reflect Code requirements. Occasionally, however, recommended practices that go beyond Code requirements are included.

The “good practices” are labeled as such and should not be construed as Code requirements.

[502.4.3]

Code References in the Guide

References to the 2009 WSEC are placed in the left margin similar to this sample.

What’s New In this Edition?

The 2009 WSEC has numerous changes, additions and some deletions from the 2006 WSEC. This edition of the *Builder’s Field Guide* reflects those changes. Previous editions had chapters dedicated to radon and ventilation requirements. Those chapters have been deleted because the stand-alone *Ventilation and Indoor Air Quality Code* has been repealed and the requirements have been incorporated into the *International Residential Code (IRC)*, *International Mechanical Code (IMC)*, and the *International Building Code (IBC)*. Two new chapters – 9 (Credits) and 11 (Lighting) – have been added. Illustrations have also been updated. Since this Guide is published in a searchable PDF format, a detailed table of contents and index has been deleted.

If you have questions, comments or other input about the Guide, feel free to email us at energycode@energy.wsu.edu

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The 2009 version of the *Builder's Field Guide* was updated by Washington State University Extension Energy Program staffers Gary Nordeen (project lead), Luke Howard, Emily Salzberg, Tanya Beavers, and Gerry Rasmussen (graphic design), and supervised by Todd Currier (Division Manager).

List of Acronyms Used in the WSEC

ABS	Acrylonitrile Butadiene Styrene
ACCA	Air Conditioning Contractors of America Association, Inc.
ACH	Air Changes per Hour
AFUE	Annual Fuel Utilization Efficiency (DOE)
APA	American Plywood Association (now called <i>APA – The Engineered Wood Association</i>)
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASTM	American Society for Testing and Materials
BTU (Btu)	British Thermal Units
CFM (cfm)	Cubic Feet per Minute
Code	Washington State Energy Code
COP	Coefficient of Performance
DOE	U.S. Department of Energy
EF	Energy Factor
EPA	U.S. Environmental Protection Agency
EPS	Expanded Polystyrene
HRV	Heat Recovery Ventilator
HSPF	Heating Season Performance Factor
HUD	U.S. Department of Housing and Urban Development
HVAC	Heating, Ventilation and Air Conditioning
HVI	Home Ventilating Institute
IBC	International Building Code

IC rated	Insulation Cover Rated
ICF	Insulated Concrete Form
IMC	International Mechanical Code
IRC	International Residential Code
NAECA	National Appliance Energy Conservation Act (1987)
NFRC	National Fenestration Rating Council
SBCC	Washington State Building Code Council
SHGC	Solar Heat Gain Coefficient
SEER	Seasonal Energy Efficiency Ratio
SLA	Specific Leakage Area
SMACNA	Sheet Metal & Air Conditioning Contractors National Association
sq.ft.	Square Foot/Feet
SRCC	Solar Rating Certification Corporation
UA	U-Factor x Area
UL 181	Underwriter's Laboratory Test #181
WSEC	Washington State Energy Code
XPS	Extruded Polystyrene