

RHODE ISLAND
RESIDENTIAL STRETCH CODE
COMPLIANCE CHECKLIST AND SUPPORTING DOCUMENTS



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STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

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Introduction

The checklists and documents included in this compliance packet are companion pieces to the Rhode Island Residential Stretch Code, and do not replace any of the provisions of the stretch code, or any other Rhode Island building code. The full stretch code is available for download at the following weblink: <http://www.energy.ri.gov/policies-programs/lead-by-example/rhode-island-stretch-codes.php>

The following checklists and supporting materials may be used to assist in demonstrating compliance with the Stretch Code, and are designed to be used in conjunction with the verification requirements of the Stretch Code and referenced programs.

Included in this packet are checklists for the following compliance categories:

- Energy Efficiency
- Alternative Compliance for Energy Efficiency
- Thermostats
- Water Efficiency
- Renewable Energy Readiness
- Electric Vehicle Readiness
- Indoor Environmental Quality
- Operations and Maintenance
- A resource summary guide with links to stretch code associated third-party programs

Compliance Verification – Compliance with the provisions of the stretch code is demonstrated through a verification process. Each of the certification programs recognized as compliance paths for energy efficiency (DOE ZERH, LEED, Passive House, and Living Building Challenge) has its own verification process, and documentation of compliance with the selected program should be submitted to the Rhode Island Office of Energy Resources.

To verify compliance with the stretch code without completing a certification program, it is the responsibility of the applicant to provide documentation of third party verification. A signed statement of compliance from a Residential Energy Specialist must be submitted with the applicable checklists included in the Residential Stretch Code Compliance Packet. Residential Energy Specialists shall have at least three (3) years building design or construction experience, and shall possess at least one of the following professional certifications¹:

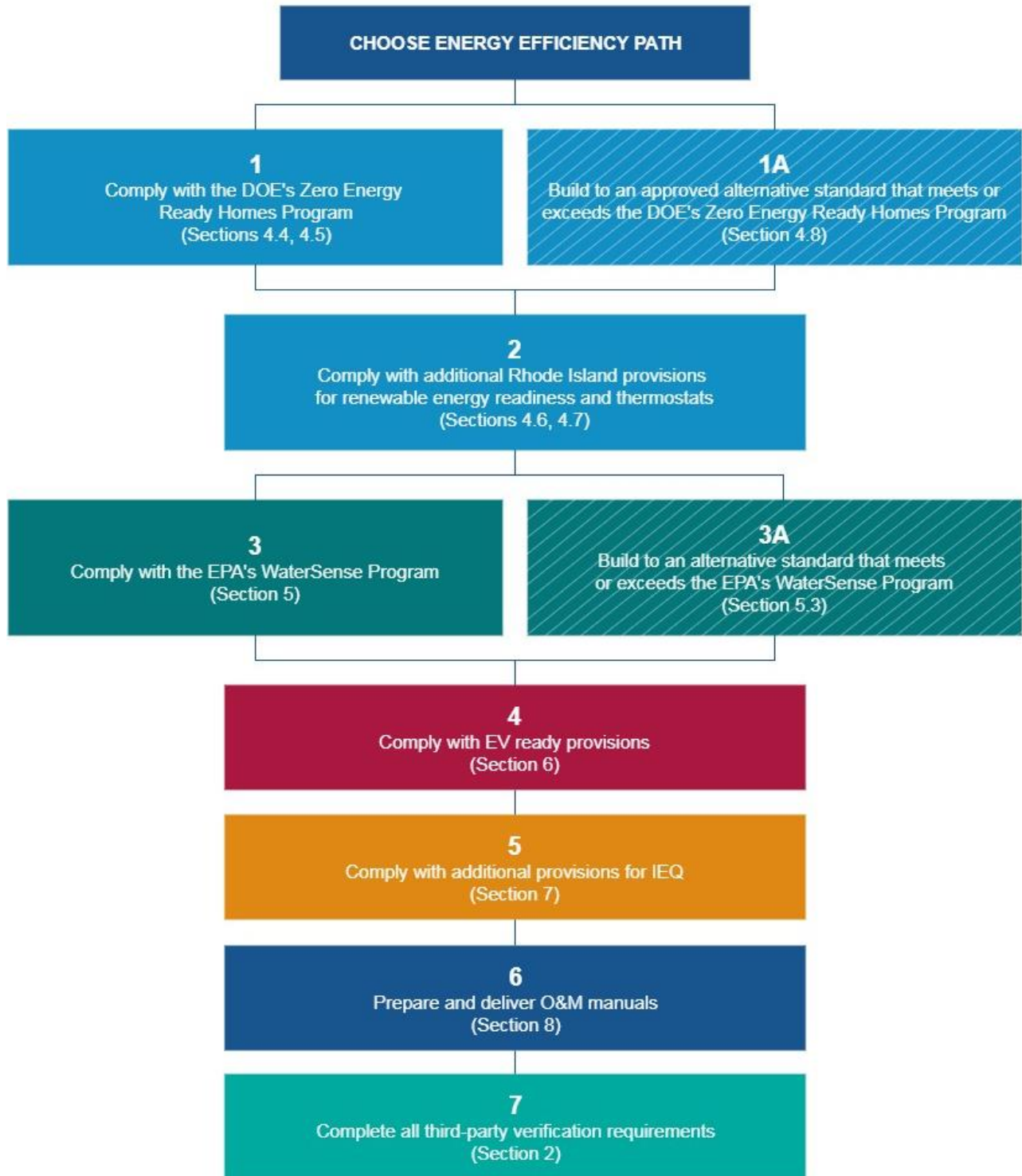
- Residential Energy Services Network (RESNET) - Home Energy Rating System (HERS) Certified Rater
- Building Performance Institute (BPI) - Certified Building Analyst, or Certified Energy Auditor
- Association of Energy Engineers (AEE) - Certified Energy Manager or Certified Energy Auditor

Compliance with non-energy provisions of the Stretch Code is verified by completing and submitting a signed copy of the checklist(s) included in the Residential Stretch Code Compliance Packet.

Figure 1 summarizes the process and options for compliance with this code.

¹ Links to the referenced certification programs are included in Appendix A of the Stretch Code

Figure 1. Summary of Compliance Path Options



Additional Information:

- All projects must also comply with all current applicable Rhode Island base codes.

- When using alternative compliance paths, it is the responsibility of the applicant to arrange for the verification of performance levels equivalent to the main compliance paths.
- Please be sure to comply with all requirements listed in this document as well as the requirements published for selected compliance paths

Rhode Island Residential Stretch Code

Compliance Checklists

APPLICANT INFORMATION	
Name:	
Company name:	
Project role	<input type="checkbox"/> Owner <input type="checkbox"/> Builder <input type="checkbox"/> Architect <input type="checkbox"/> Other <i>Describe</i> _____
Address:	
Telephone number:	
Email address:	

PROJECT INFORMATION	
Project street address:	
Project start date:	Month _____ Year _____
Project completion date:	Month _____ Year _____
Above ground area:	_____ (ft ²)
Approximate construction cost:	\$ _____

Energy Efficiency (RISC section 4)

The main compliance path is the U. S. DOE Zero Energy Ready Homes Program. Four alternative compliance paths are also acceptable. All Energy Efficiency requirements must be verified through the referenced program, or by a third-party verifier as defined in the code.

DOE ZERO ENERGY READY HOME (ZERH) CHECKLIST

COMPLETE THIS SECTION IF USING ZERH PROGRAM CERTIFICATION FOR ENERGY EFFICIENCY COMPLIANCE

	Requirement - Check-off and document ZERH certification and select and document the appropriate compliance path.	Notes – Note any project compliance issues and/or document attachments.
<input type="checkbox"/>	Completed project has been certified as a DOE ZERH qualifying home.	
Provide documentation for <u>one</u> of the following ZERH compliance paths:		
<input type="checkbox"/>	The ZERH Prescriptive Path was documented for compliance and a copy of the prescriptive compliance report signed by an approved ZERH Verifier is attached	
<input type="checkbox"/>	The ZERH Performance Path was documented for compliance and a copy of the DOE Zero Energy Ready Home Verification Summary report generated by the rating software, and signed by an approved ZERH Verifier is attached	

ENERGY EFFICIENCY CHECKLIST FOR ALTERNATIVE COMPLIANCE PATHS

COMPLETE THIS SECTION IF USING AN ALTERNATIVE PATH ENERGY EFFICIENCY COMPLIANCE

	Requirement – <i>Check-off and document at least <u>one</u> of the following energy performance compliance paths</i>	Notes – <i>Note any project compliance issues and/or document attachments.</i>
<input type="checkbox"/>	<p>LEED for Homes - The completed project has been certified as a USGBC LEED for Homes v4 Certified Building. A copy of the certification documents is attached.</p> <p><i>Note: For compliance with the Stretch Code, LEED projects must comply with the LEED for Homes mandatory requirements and elective provisions that demonstrate energy performance equal to or exceeding the provisions of the DOE ZERH program requirements.</i></p>	
<input type="checkbox"/>	<p>Passive House Program – The completed project has been certified as a Passive House PHIUS+ Certified Building. A copy of the certification documents is attached.</p>	
<input type="checkbox"/>	<p>Living Building Challenge - The completed project has been certified as an International Living Future Institute Living Building Challenge v3.1 Certified Building. Attached is a copy of either one of the following documents:</p> <ul style="list-style-type: none"> • Living Building Certification • Living Building Challenge Net Zero Energy Building Certification 	
<input type="checkbox"/>	<p>Alternative Energy Efficiency Documentation – The completed project is not certified through one of the Stretch Code recognized programs. However, it has been designed and constructed to an equivalent performance level.</p> <p>The energy performance has been verified by a third-party building professional as defined in section 2 of the Stretch Code. A signed compliance statement on the verifier’s letterhead is attached with supporting documentation.</p>	

Thermostat Requirements (RISC section 4.7)

For the Stretch Code, these requirements replace the thermostat requirements included in the ZERH or alternative energy efficiency compliance paths.

CHECKLIST FOR RHODE ISLAND SPECIFIC THERMOSTAT REQUIREMENTS

COMPLETE THIS SECTION FOR DEMONSTRATING COMPLIANCE WITH HEATING AND COOLING THERMOSTAT REQUIREMENTS

	Requirement – <i>Check-off and document the following thermostat requirements that apply to this project</i>	Notes – <i>Note any project compliance issues and/or document attachments.</i>
<input type="checkbox"/>	Wireless “smart” thermostat – Wireless “smart” thermostats as defined by the ENERGY STAR program and meeting the requirements of National Grid’s Residential New Construction Program have been installed for all central heating and cooling system.	
<input type="checkbox"/>	Exception for Ductless Heat Pump Systems – For ductless heat pump installations, a wall mounted thermostat compatible with the heat pump may be installed rather than a wireless “smart” thermostat. Handheld remote controls do not meet the thermostat requirements of this code.	

Renewable Ready Compliance (RISC section 4.6)

The following checklist replaces the “Renewable Ready” checklist included in the DOE ZERH program documents and is required to be completed for all projects.

CHECKLIST FOR RENEWABLE READY COMPLIANCE

COMPLETE THIS SECTION TO DEMONSTRATE THAT THE PROJECT IS READY FOR THE INSTALLATION OF A SOLAR PHOTOVOLTAIC (PV) SYSTEM

	Requirement – <i>Complete the checklist and document the following requirements</i>	Notes – <i>Note any project compliance issues and/or document attachments.</i>
<input type="checkbox"/>	<p>PV Installation – A PV system has been installed by a solar installation firm that holds the following credentials: a Rhode Island Contractors’ Registration and Licensing Boards registration, proof of registration with the Rhode Island Secretary of State’s Office, and a Rhode Island Renewable Energy Professional Certificate and/or a Valid “A” Electrical license. <i>Note: If a PV installation has been completed, the remaining categories in this checklist are not required to be completed.</i></p>	
<input type="checkbox"/>	<p>Solar Site Evaluation – Attach a solar site evaluation from a solar installation firm that holds the following credentials: a Rhode Island Contractors’ Registration and Licensing Boards registration, proof of registration with the Rhode Island Secretary of State’s Office, and a Rhode Island Renewable Energy Professional Certificate and/or a Valid “A” Electrical license. The site evaluation must detail the location of the roof- or ground-mounted PV panels and evaluate shading factors affecting system performance.</p>	
<input type="checkbox"/>	<p>Conduits - Installation of two 1” minimum diameter EMT conduits from the main electrical panel location to the attic or other area easily accessible to the PV panel proposed location. Or; Alternative: installation of conduits as specified on a proposed PV installation plan from a credentialed installation firm</p>	
<input type="checkbox"/>	<p>Circuit breakers - Installation of a 70-amp dual pole circuit breaker in the electrical service panel dedicated for use by a PV system. Or; Alternative: A labeled slot for a double-pole breaker in the electrical service panel is provided.</p>	
<input type="checkbox"/>	<p>For roof-mounted systems – Provide code-compliant documentation of the maximum allowable dead load and live load ratings of the proposed roof. The roof structure dead load rating shall support an additional 6 lbs/sq. ft. for future solar system, and shall meet all Rhode Island Building Code requirements as required by the local code official.</p>	
<input type="checkbox"/>	<p>For ground-mounted systems – The location of the panels must be identified in the submitted construction plans, and the location must be dedicated for the future installation of the panels.</p>	

Water Efficiency Compliance (RISC section 5)

CHECKLIST FOR WATER EFFICIENCY COMPLIANCE		
COMPLETE THIS SECTION TO DEMONSTRATE THE EFFICIENT USE OF WATER RESOURCES		
	Requirement – Complete the checklist and document <u>one</u> of the following requirements	Notes – Note any project compliance issues and/or document attachments.
<input type="checkbox"/>	<p>EPA Water Sense Certification – The project has been certified as complying with the U.S. Environmental Protection Agency’s Water Sense Program. A copy of the certification is attached.</p> <p><i>Note: Many HERS energy raters are also qualified as Water Sense verifiers.</i></p>	
<input type="checkbox"/>	<p>Alternative Compliance – The project meets the performance requirements of the Water Sense Program but is not certified by the EPA. Third-party verification is attached.</p> <p><i>Note: Many HERS energy raters are also qualified as Water Sense verifiers.</i></p>	

Electric Vehicle (EV) Ready Compliance (RISC section 6)

For compliance with this code, the building must be prepared to facilitate the installation of a level 2 EV charging station.

CHECKLIST FOR EV READY COMPLIANCE		
COMPLETE THIS SECTION TO DEMONSTRATE THAT THE BUILDING IS PREPARED FOR THE INSTALLATION OF A CHARGING STATION		
	Requirement – Complete the checklist and document <u>each</u> of the following requirements	Notes – Note any project compliance issues and/or document attachments.
<input type="checkbox"/>	<p>Conduit – A raceway (conduit) is installed to accommodate a 240v 40-amp circuit (level 2) which terminates at an electrical circuit panel at one end and in a garage or an exterior parking location at the other end.</p>	
<input type="checkbox"/>	<p>Electrical Enclosure - An approved electrical enclosure (outlet box) is installed at the location of the future charging station.</p>	
<input type="checkbox"/>	<p>Circuit Breaker – Space for a dedicated double pole 40-amp circuit breaker in the main electrical distribution panel, or subpanel, is labelled.</p>	
<input type="checkbox"/>	<p>Electrical Code – The installation was completed by a licensed electrician and was inspected by the electrical inspector.</p>	

Indoor Environmental Quality Compliance (RISC section 7)

For compliance with this code, interior surface finishes must have low or no VOC content.

CHECKLIST FOR INDOOR ENVIRONMENTAL QUALITY COMPLIANCE

COMPLETE THIS SECTION TO DEMONSTRATE THAT LOW, OR NO, VOC CONTENT INTERIOR FINISH MATERIALS, INCLUDING PAINTS, STAINS, AND VARNISHES HAVE BEEN USED

	Requirement – Complete the checklist and document <u>one</u> of the following compliance options	Notes – Note any project compliance issues and/or document attachments.
<input type="checkbox"/>	Greenguard Program – The interior surface finishes and materials are certified by the Greenguard Program	
<input type="checkbox"/>	Cradle to Cradle Program - The interior surface finishes and materials are certified by the Cradle to Cradle Program	
<input type="checkbox"/>	Health Product Declaration (HPD) Program - The interior surface finishes and materials meet the guidelines included in the HDP User Guide	
<input type="checkbox"/>	Declare Program - The interior surface finishes and materials are included in the Living Building Challenge Declare Program product database	

Operations and Maintenance (O&M) Compliance (RISC section 8)

For compliance with this code, the owners must receive an O&M guide.

CHECKLIST FOR (O&M) COMPLIANCE

COMPLETE THIS SECTION TO DEMONSTRATE THAT A COMPREHENSIVE O&M GUIDE HAS BEEN PREPARED FOR THE OWNERS AND/OR OCCUPANTS

	Requirement – Complete the checklist and document <u>each</u> of the following requirements	Notes – Note any project compliance issues and/or document attachments.
<input type="checkbox"/>	<p>O&M Guide – An O&M Guide including the following information has been prepared and delivered to the owner/occupants, or is included with the “hand-off” documents at the time of home purchase</p> <ul style="list-style-type: none"> • A description of all energy using systems and appliances in the home. • The manufacturer’s operating manual for each system and appliance. • Manufacturer’s instructions for all thermostats. • The required solar site evaluation and a description of the PV ready conduit installed. • A description of the EV charging station preparation that was installed. • Brochures for the finishes (paints, stains, varnishes, carpet, etc.) that are present in the home. • Manufacturer’s instructions/operating manual for all safety equipment such as smoke, fire, carbon monoxide, radon detectors, and fire extinguishers. • Manufacturer’s instruction for any “smart” home energy management systems such as smart hubs, networked lighting controls, etc. 	
<input type="checkbox"/>	<p>Energy Efficiency and Renewable Energy Program Information – An information packet describing the current opportunities available through utility and government sources supporting energy efficiency improvements and the installation of renewable energy systems has been provided to the occupants, or is included with the “hand-off” documents at the time of home purchase.</p>	

Compliance Packet Supplementary Documents

The following supplementary documents can help guide applicants through the process and are linked in the References and Program Links section of this document. Please contact the Rhode Island Office of Energy Resources via email Energy.Resources@energy.ri.gov for assistance viewing or accessing these documents.

- U. S. DOE Zero Energy Ready Home Program Guidelines
- U. S. DOE Zero Energy Ready Home Program Prescriptive Report Sample Form
- U.S. Green Building Council; LEED for Homes Certification Guide
- Passive House Certification Guide
- Living Building Challenge Overview
- National Grid Residential Energy Efficiency Program Overview
- EPA Water Sense Guidelines
- A Current List of Rhode Island Certified Solar Installers
- Greenguard Program Guidelines

References and Program Links

The following references and weblinks are organized by code section.

Section 1. Introduction

U.S. Department of Energy (DOE) Zero Energy Ready Homes program:

<https://energy.gov/eere/buildings/zero-energy-ready-home>

U.S. Environmental Protection Agency's (EPA) WaterSense program:

<https://www.epa.gov/watersense>

Section 2. Applicability, Compliance, and Relationship to other Codes

Rhode Island Building Code Commission - Includes details regarding all Rhode Island Codes: <http://www.ribcc.ri.gov/>

RESNET HERS Rater Certification – Directory of certified HERS Raters located in Rhode Island: http://www.resnet.us/professional/programs/search_directory

BPI Building Professional Certification Programs – Information on BPI's certification programs and a "Locator" for finding certified Building Analysts, and Energy Auditors:

<http://www.bpi.org/certified-professionals>

AEE Professional Certification Programs – Information on AEE's certification programs and a search tool for finding certified professionals:

<https://www.aeecenter.org/certifications>

Energy Auditor, or AEE Certified Energy Manager

Section 3. Effective Use of This Code

Licensed contractors - Licensed electricians and individuals and companies holding a Rhode Island Renewable Energy Professionals (REP) certificate are legally qualified to install solar PV systems in Rhode Island. A list of individuals and companies holding a REP certificate, as well as guidelines for qualifying for the certification can be found at <http://www.energy.ri.gov/policies-programs/for-vendors/renewable-energy-professional.php>

Renewable Energy Fund (REF) - The Rhode Island Commerce Corporation offers first-come-first-serve grants for renewable energy systems. Often these grants can cover 25-30% percent of renewable energy installation costs. These projects include both photovoltaic (PV) and solar domestic hot water (SDHW) technologies. For more information visit: <http://commerceri.com/finance-business/renewable-energy-fund/small-scale-projects/>

Renewable Energy Growth (REG) Program- Available to eligible renewable distributed generation (DG) projects, the REG Program enables National Grid customers to sell their generation output under long-term tariffs at fixed prices. For more information visit: https://www9.nationalgridus.com/narragansett/business/energyeff/4_dist_gen.asp

Tax Incentives - Information regarding sales tax exemptions and income tax credits is available at the following link: <http://www.energy.ri.gov/policies-programs/programs-incentives/solarize-ri.php>

Section 4 – Energy Efficiency

Energy Star Smart Thermostats:

https://www.energystar.gov/products/heating_cooling/smart_thermostats

National Grid Thermostat Incentives: <https://www.nationalgridus.com/media/pdfs/resi-ways-to-save/thermostat-rebate.pdf>

ZERH program resources:

The ZERH program is a fully supported program that provides guidance and third-party project verification.

Program home page that provides general program information and a navigation menu. <https://energy.gov/eere/buildings/zero-energy-ready-home>

Program participation guidelines as well as an introduction to the prescriptive and performance paths are presented on this page.

<https://energy.gov/eere/buildings/guidelines-participating-doe-zero-energy-ready-home>

Specific design and construction requirements of the program can be downloaded in Adobe pdf format from this page. <https://energy.gov/eere/buildings/downloads/doe-zero-energy-ready-home-national-program-requirements-rev-06>

Design and construction guides, training opportunities, fact sheets and brochures, partner and builder links, etc. <https://energy.gov/eere/buildings/doe-zero-energy-ready-home-resources>

Additional ZERH resources are available upon registering as a program partner.

USGBC LEED Resources

Guide to LEED Certification for Homes:

<https://www.usgbc.org/cert-guide/homes>

LEED for Homes Reference Guide:

<https://www.usgbc.org/resources/leed-reference-guide-homes-design-and-construction>

Multifamily Verification and Submittal Guidelines:

<https://s3.amazonaws.com/usgbc-assets/usgbc.org/library/V4-Verification-and-Submittal-Guidelines-Final.pdf>

Passive House Resources

Passive House Program Requirements:

http://passivehouse.com/02_informations/02_passive-house-requirements/02_passive-house-requirements.htm

Certification Overview:

<http://www.phius.org/phius-certification-for-buildings-products/phius-2015-project-certification/phius-certification-overview>

Living Building Challenge Resources

The Living Building Challenge Framework for Affordable Housing:

<https://living-future.org/wp-content/uploads/2016/11/Living-Building-Challenge-Framework-for-Affordable-Housing.pdf>

Living Building Challenge 3.1 Standard:

<https://living-future.org/product/lbc-3-1-standard/>

Living Building Challenge Overview:

<https://living-future.org/lbc/basics/>

5. Water Efficiency

EPA Water Sense Program Resources

EPA WaterSense Program Guidelines (version 5.3):

<https://www.epa.gov/sites/production/files/2017-02/documents/ws-program-guidelines.pdf>

EPA WaterSense Single-Family New Home Specifications:

<https://www.epa.gov/sites/production/files/2017-02/documents/ws-specification-home-suppstatement-v1.0.pdf>

EPA WaterSense Labeled Homes Reference Guide:

<https://www.epa.gov/sites/production/files/2017-01/documents/ws-homes-labeled-reference-guide.pdf>

Resource Manual for Building WaterSense Labeled New Homes:

<https://www.epa.gov/sites/production/files/2017-01/documents/ws-homes-builder-resource-manual.pdf>

USGBC LEED Water Efficiency Resources

Homes Credit Library v4:

<https://www.usgbc.org/credits/homes/v4/water-efficiency>

LEED WaterSense for New Homes:

<https://www.usgbc.org/credits/homes/v4/wepc32>

Living Building Challenge Water Efficiency Resources

Living Building Challenge Framework for Affordable Housing:

<https://living-future.org/wp-content/uploads/2016/11/Living-Building-Challenge-Framework-for-Affordable-Housing.pdf>

Enterprise Green Communities Water Efficiency Resources

Enterprise Green Communities Criteria Manual:

<http://www.enterprisecommunity.org/sites/default/files/media-library/solutions-and-innovation/green/ecp-2015-criteria-manual-11-15.pdf>

Enterprise Green Communities Criteria Checklist:

<http://www.enterprisecommunity.org/sites/default/files/media-library/solutions-and-innovation/green/ecp-2015-criteria-checklist-11-15.pdf>

Section 7. Indoor Environmental Quality

Greenguard - Certifies both residential and commercial products for VOC levels and provide a free tool (SPOT) for identifying qualifying products.

<http://greenguard.org/en/index.aspx>

Cradle to Cradle - Certification program with product search capabilities.

<http://www.c2ccertified.org/drive-change/built-environment>

Health Product Declaration (HPD) - HDP publishes a User Guide to meeting the indoor product requirements of green building programs. <https://www.hpd-collaborative.org/resources/>

Declare - Declare is a component of the Living Building Challenge and provides guidance and a product database. <https://living-future.org/declare/>