

Reorganization



- **Chapters 2, 3 and 4 Consolidated**
- **Chapter 7 on HERS Raters Moved to RA 2**
- **Field Verification and Diagnostic Testing Procedures Moved to RA 3**

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New Modeling Features



● Attics

- Roof Pitch and Attic Geometry
- Ceiling/Framing Assembly
- Attic Ventilation
- Roof Deck (including cool roof properties)
- Reporting Requirements on CF-1R
- Calculations

● Slab Model

● Prorating Water Heating Energy

● Mechanical ventilation

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Optional Capabilities Added



- **Evaporative coolers**
- **Evaporative condensers**
- **Ice Storage Air Conditioners**

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New Solar Home Partnership



- **Energy Efficiency Requirements**
- **Photovoltaic Performance Calculation**

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New Appendices



- **Algorithms and Procedures for Calculating PV Production**
- **Special Features List**
- **Electronic Data Transfer Protocol**

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Organizational Changes



- **Chapter 7 relocated to NA1**
- **Field verification and diagnostic testing for ducts relocated to NA2**
- **Acceptance Tests relocated to NA7**

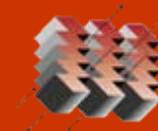
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Modeling Changes



- **Revised model for slabs-on-grade and below-grade walls**
- **Alternate Schedules provided to model lighting controls**
- **Procedure provided to model daylighting under skylights**
- **Procedure provided to model tubular skylights**
- **Default modeling assumptions modified for cool roofs**
- **Credit added for FDD (2.5.3.12)**
- **Additional roof layer allowed for ballasted roofs, pavers and other mass elements over the top of the roof membrane**

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Optional capabilities



- **Multiple Hydronic Circulation Loops (3.3.16)**
- **Underfloor Air Distribution (3.3.17)**
- **Thermal Energy Storage (3.3.18)**
- **Distributed Energy Storage DX AC System (3.3.19)**

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Miscellaneous Changes



- **Revisions to the reference method comparison tests**
- **NACM Appendix E – Algorithm for Energy Use of Distributed Energy Storage Direct-Expansion Air Conditioners**

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Joint Appendices



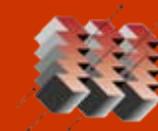
- **JA1 – Glossary**
- **JA2 – Reference Weather/Climate Data**
- **JA3 – Time Dependent Valuation (TDV)**
- **JA4 – U-factor, C-factor, and Thermal Mass Data**
- **JA5 – Reference Design for Programmable Communicating Thermostats**
- **JA6 – Charge Indicator Display**
- **JA7 – Quality Insulation Installation Procedures for Medium-Density, Closed-Cell and Low Density, Open-Cell Spray Polyurethane Foam (SPF)**
- **JA8 – Testing Of Light Emitting Diode Lighting Systems**

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Residential Appendices



- **RA1 – HVAC Sizing**
- **RA2 – Residential HERS Documentation and Enforcement Procedures**
- **RA3 – Residential Field Verification and Diagnostic Test Procedures**
- **RA4 – Eligibility Criteria for Energy Efficiency Measures**
- **RA5 – Interior Mass Capacity**

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Nonresidential Appendices



- **NA1 – Nonresidential HERS Documentation and Enforcement Procedures**
- **NA2 – Nonresidential Field Verification and Diagnostic Test Procedures**
- **NA3 – Fan Motor Efficiencies**
- **NA4 – Compliance Procedures for Relocatable Public School Buildings**
- **NA5 – Envelope Tradeoff Procedure**
- **NA6 – Alternate Default Fenestration Thermal Properties**
- **NA7 – Acceptance Requirements for Nonresidential Buildings**
- **NA8 – Illuminance Categories and Luminaire Power**

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