

# Building Science Institute, Ltd. Co. Process 002-2021 Building Science Education Training & Certification System

Approved by Brett Dillon – Dec. 8, 2021, 6:52 a.m.

## Related policies:

- [Building Science Institute, Ltd. Co. Policy 08-2021 Terminology](#)
- [Building Science Institute, Ltd. Co. Policy 11-2021 Resource Requirements for Verification Organizations](#)

This process applies to Verification Organizations and the Building Science Institute, Ltd. Co.

## Quality Assessor / Quality Assessment Designee

True North Quality Management Services Quality Assessors credentialed by the Building Science Institute are qualified to perform external quality management conformance assessments for conformance with ENERGY STAR® New Homes program requirements, ANSI/RESNET/ICC 301-2019, ANSI/RESNET/ICC 380-2019, ANSI/RESNET/ACCA 310-2020, ANSI/ACCA Standard 12-2018, and Building Science Institute policies and processes.

Quality Assessment Designees credentialed by the Building Science Institute are direct employees of verification organizations and are qualified to perform internal quality management conformance assessments for conformance with ENERGY STAR® New Homes program requirements, ANSI/RESNET/ICC 301-2019, ANSI/RESNET/ICC 380-2019, ANSI/RESNET/ACCA 310-2020, ANSI/ACCA Standard 12-2018, and Building Science Institute policies and processes.

## Quality Assessor / Quality Assessment Designee Pre-Requisite Work Experience

Prior to credentialing, candidates must have documented work experience as:

- ENERGY STAR® Verifier, 3 years performing energy ratings OR
- 3 years performing Quality Control in construction as a qualified engineer, inspector, or architect OR
- 3 years of experience in residential construction as a builder, green building verifier, energy auditor, or performing weatherization PLUS experience performing at least 25 energy ratings (energy rating experience may be gained during training phase prior to credentialing; if True North Quality Management Services Quality Assessor candidate, may be gained through secondment to verification organization with provision that candidate does NOT perform conformity assessments on that verification organization for a period not to exceed one year) OR
- Current certification as a RESNET Quality Assurance Designee

## Quality Assessor / Quality Assessment Designee Required Training

Prior to credentialing, candidates must successfully complete the following training programs:

1. ASQ Auditing Fundamentals 1 (8 hours)
2. ASQ Auditing Fundamentals 2 (9 hours)
3. ASQ Auditing Fundamentals 3 (8 hours)
4. ANSI/RESNET/ICC 301-2019 training by Building Science Education (50 hours)
5. ANSI/RESNET/ICC 380-2019 training by Building Science Education (10 hours)

6. ANSI/RESNET/ACCA 310-2020 training by Building Science Education (6 hours)
7. ANSI/ACCA 12-2018 training by Building Science Education (6 hours)
8. Energy Modeler training by Building Science Education (7 hours)
9. ENERGY STAR® Single Family training by Building Science Education (3.2 hours)
10. ENERGY STAR® Multi Family training by Building Science Education (4.8 hours)
11. ENERGY STAR® Quality Assessment training by Building Science Education (1 hour)
12. ISO 19011-2018 training by Building Science Education (3 hours)
13. ISO 17020-2012 training by Building Science Education (20 hours)

A current or prior certification as a RESNET QAD may waive up to 40 hours of training on ANSI/RESNET/ICC 301-2019 through a challenge test proctored by Building Science Education.

### **Quality Assessor / Quality Assessment Designee Required Assessments**

Prior to credentialing and deployment, candidates must successfully complete the following assessments:

1. ASQ Auditing Fundamentals 3 exam
2. ENERGY STAR® Single Family exam proctored by Building Science Education
3. ENERGY STAR® Multi Family exam proctored by Building Science Education
4. 20 ENERGY STAR® software file evaluations mentored by True North QMS Quality Assessor
5. 10 ENERGY STAR® field evaluations mentored by True North QMS Quality Assessor
6. Building Science Institute Policies 09-2021 “General Requirements for Verification Organizations”, 10-2021 “Structural Requirements for Verification Organizations”, 11-2021 “Resource Requirements for Verification Organizations”, and 12-2021 “Process Requirements for Verification Organizations” conformity assessments mentored by True North QMS Quality Assessor

### **Quality Assessor / Quality Assessment Designee Competencies**

Assessors and Designees must demonstrate knowledge of:

- ANSI/RESNET/ICC 301-2019
- ANSI/RESNET/ICC 380-2019
- ANSI/RESNET/ACCA 310-2020
- ANSI/ACCA 12-2018
- ENERGY STAR® Single Family program requirements
- ENERGY STAR® Multi Family program requirements
- ISO 19011-2018
- ISO 17020-2012
- HouseRater software
- residential construction systems
- operation of processes
- delivery of services
- defects which may occur during construction of a dwelling unit
- failures in the operation of a process
- deficiencies in the delivery of services
- building science
- significance of deviations found with regard to energy code, residential construction specifications, operation of processes, and the delivery of services

Assessors and Designees must demonstrate the following communication skills:

- Listening
- Questioning
- Probing
- Critiquing
- Conflict resolution
- Clear and concise communications
- Good writing skills
- Good oral skills
- Appropriate body language
- Tact

Assessors and Designees must demonstrate the following assessment skills:

- Identify the steps needed to prepare for an audit
- Use general audit terminology
- Identify types of data used as evidence
- Conduct the steps for performing an audit
- Use working papers such as checklists
- Determine when a practice or situation represents a nonconformance or finding
- Determine methods to analyze and classify nonconformities or findings
- Report results of an audit
- Verify corrective action of audit findings
- Close out audit findings
- Demonstrate linkages between reporting and follow-up to ensure there was action
- Integrate process auditing practices and auditing process-based management systems into auditing conventions
- Explain audit terminology
- Apply the principles of professional conduct
- Respond to unethical situations and conduct
- Determine the purpose of audits
- Relate how audits add value
- Apply new auditor competencies for team leadership
- Apply verification and validation techniques during audits
- Implement audit program management strategies
- Assess configuration management systems
- Explain risk management basics
- Explain business processes and how they are linked
- Contrast joint and combined auditing
- Provide advisor and other roles that add value
- Incorporate ISO 19011:2018 guidance to current practices
- Design check sheets, checklist and logs
- Apply flow charting techniques on the job
- Use different types of charts(i.e. pie, line, Pareto, CE, etc.)
- Assess quality improvement programs such as lean, corrective action, FMEA, 5S, and Six Sigma
- Select the appropriate sampling method for the situation
- Explain sampling concepts such as consumer risk
- Determine if statistical and non-statistical sampling is appropriate

- Explain descriptive statistics
- Use quality tools such as histograms
- Assess quantitative and qualitative data
- Identify variables and attribute data
- Link results to wealth of the organization using cost of quality
- Interpret histograms and scatter diagrams
- Explain the purpose and use of control charts
- Identify in-control and capable processes
- Assess quality tool usage by others

## **ENERGY STAR Verifier**

ENERGY STAR Verifiers credentialed by the Building Science Institute are qualified to perform verifications, testing, and software analysis for the ENERGY STAR New Homes Single & Multi Family programs; perform verifications, testing, and software analysis in conformance with ANSI/RESNET/ICC 301-2019, 380-2019, and ANSI/RESNET/ACCA 310-2020; and perform inspections, testing, and software analysis for the ICC Energy Code Prescriptive, UA, Cost Performance, and Energy Rating Index (ERI) compliance paths.

## **ENERGY STAR Verifier Required Training**

Prior to credentialing, candidates must successfully complete the following training programs:

1. ICC-approved Plans Examiner/Energy Code Inspector (8 hours)
2. ANSI/RESNET/ICC 301-2019 training by Building Science Education (50 hours)
3. ANSI/RESNET/ICC 380-2019 training by Building Science Education (10 hours)
4. ANSI/RESNET/ACCA 310-2020 training by Building Science Education (6 hours)
5. ANSI/ACCA 12-2018 training by Building Science Education (6 hours)
6. Energy Modeler training by Building Science Education (7 hours)
7. ENERGY STAR Single Family training by Building Science Education (3.2 hours)
8. ENERGY STAR Multi Family training by Building Science Education (4.8 hours)
9. HouseRater training by Building Science Education (2 hours)

## **ENERGY STAR Verifier Required Assessments**

1. ICC-proctored Plans Examiner/Energy Code Inspector exam
2. ENERGY STAR Single Family exam proctored by Building Science Education
3. ENERGY STAR Multi Family exam proctored by Building Science Education
4. 10 energy models in HouseRater (plans & specs provided by Building Science Education), evaluated by Quality Assessor or Quality Assessment Designee credentialed by the Building Science Institute
  1. 2 single story
  2. 2 2-story
  3. 2 duplexes
  4. 2 townhouses
  5. 2 apartment units
5. 5 pre-drywall/insulation ENERGY STAR verifications mentored by Quality Assessor or Quality Assessment Designee credentialed by the Building Science Institute
6. 5 final ENERGY STAR verifications mentored by Quality Assessor or Quality Assessment Designee credentialed by the Building Science Institute

## **ENERGY STAR Verifier Competencies**

ENERGY STAR Verifiers must demonstrate knowledge of:

- ICC International Energy Code, 2018
- ANSI/RESNET/ICC 301-2019
- ANSI/RESNET/ICC 380-2019
- ANSI/RESNET/ACCA 310-2020
- ENERGY STAR Single Family
- ENERGY STAR Multi Family
- HouseRater
- residential construction systems
- operation of processes
- delivery of services
- defects which may occur during construction of a dwelling unit
- failures in the operation of a process
- deficiencies in the delivery of services
- building science
- significance of deviations found with regard to energy code, residential construction specifications, operation of processes, and the delivery of services

## **ENERGY STAR Software Analyst**

ENERGY STAR Software Analysts credentialed by the Building Science Institute are qualified to perform software analysis for the ENERGY STAR New Homes Single & Multi Family programs; perform software analysis in conformance with ANSI/RESNET/ICC 301-2019, 380-2019, and ANSI/RESNET/ACCA 310-2020; and perform software analysis for the ICC Energy Code Prescriptive, UA, Cost Performance, and Energy Rating Index (ERI) compliance paths. They are NOT qualified to perform verifications, inspections, and testing and must work with a qualified Verifier/Field Verifier credentialed by the Building Science Institute.

## **ENERGY STAR Software Analyst Required Training**

Prior to credentialing, candidates must successfully complete the following training programs:

1. ICC-approved Plans Examiner (2 hours)
2. Software analyst specific ANSI/RESNET/ICC 301-2019 training by Building Science Education (12 hours)
3. ANSI/RESNET/ACCA 310-2020 training by Building Science Education (4 hours)
4. Energy Modeler training by Building Science Education (7 hours)
5. ENERGY STAR Single Family training by Building Science Education (3.2 hours)
6. ENERGY STAR Multi Family training by Building Science Education (4.8 hours)
7. HouseRater training by Building Science Education (2 hours)

## **ENERGY STAR Software Analyst Required Assessments**

1. ICC-proctored Plans Examiner exam
2. ENERGY STAR Single Family exam proctored by Building Science Education
3. ENERGY STAR Multi Family exam proctored by Building Science Education

4. 10 energy models in HouseRater (plans & specs provided by Building Science Education), evaluated by Quality Assessor or Quality Assessment Designee credentialed by the Building Science Institute
  1. 2 single story
  2. 2 2-story
  3. 2 duplexes
  4. 2 townhouses
  5. 2 apartment units

### **ENERGY STAR Software Analyst Competencies**

ENERGY STAR Software Analysts must demonstrate knowledge of:

- ICC International Energy Code, 2018
- ANSI/RESNET/ICC 301-2019
- ENERGY STAR Single Family program requirements
- ENERGY STAR Multi Family program requirements
- HouseRater
- residential construction systems
- operation of processes
- delivery of services
- failures in the operation of a process
- deficiencies in the delivery of services

### **ENERGY STAR Field Verifier**

ENERGY STAR Field Verifiers credentialed by the Building Science Institute are qualified to perform verifications and testing for the ENERGY STAR New Homes Single & Multi Family programs; perform verifications and testing in conformance with ANSI/RESNET/ICC 301-2019, 380-2019, and ANSI/RESNET/ACCA 310-2020; and perform inspections and testing for the ICC Energy Code Prescriptive, UA, Cost Performance, and Energy Rating Index (ERI) compliance paths. They are NOT qualified to perform software analysis and must work with a qualified Software Analyst credentialed by the Building Science Institute.

### **ENERGY STAR Field Verifier Required Training**

Prior to credentialing, candidates must successfully complete the following training programs:

1. ICC-approved Energy Code Inspector (6 hours)
2. ANSI/RESNET/ICC 301-2019 Appendix A & B training by Building Science Education (6 hours)
3. ANSI/RESNET/ICC 380-2019 training by Building Science Education (10 hours)
4. ANSI/RESNET/ACCA 310-2020 training by Building Science Education (2 hours)
5. ANSI/ACCA 12-2018 training by Building Science Education (6 hours)
6. ENERGY STAR Single Family training by Building Science Education (3.2 hours)
7. ENERGY STAR Multi Family training by Building Science Education (4.8 hours)
8. HouseRater training by Building Science Education (2 hours)

### **ENERGY STAR Field Verifier Required Assessments**

1. ICC-proctored Energy Code Inspector exam
2. ENERGY STAR Single Family exam proctored by Building Science Education
3. ENERGY STAR Multi Family exam proctored by Building Science Education

4. 5 pre-drywall/insulation ENERGY STAR verifications mentored by Quality Assessor or Quality Assessment Designee credentialed by the Building Science Institute
5. 5 final ENERGY STAR verifications mentored by Quality Assessor or Quality Assessment Designee credentialed by the Building Science Institute

### **ENERGY STAR Field Verifier Competencies**

ENERGY STAR Field Verifiers must demonstrate knowledge of:

- ICC International Energy Code, 2018
- ANSI/RESNET/ICC 301-2019, Appendices A & B
- ANSI/RESNET/ICC 380-2019
- ENERGY STAR Single Family
- ENERGY STAR Multi Family
- residential construction systems
- operation of processes
- delivery of services
- defects which may occur during construction of a dwelling unit
- failures in the operation of a process
- deficiencies in the delivery of services
- building science
- significance of deviations found with regard to energy code, residential construction specifications, operation of processes, and the delivery of services

### **Energy Code Compliance Specialist**

Energy Code Compliance Specialists credentialed by the Building Science Institute are qualified to perform verifications, testing, and software analysis in conformance with ANSI/RESNET/ICC 301-2019, 380-2019, and ANSI/RESNET/ACCA 310-2020; and perform inspections, testing, and software analysis for the ICC Energy Code Prescriptive, UA, Cost Performance, and ERI compliance paths. They are NOT qualified to perform verifications, testing, or software analysis on ENERGY STAR certified homes.

### **Energy Code Compliance Specialist Required Training**

Prior to credentialing, candidates must successfully complete the following training programs:

1. ICC-approved Plans Examiner/Energy Code Inspector (8 hours)
2. ANSI/RESNET/ICC 301-2019 training by Building Science Education (50 hours)
3. ANSI/RESNET/ICC 380-2019 training by Building Science Education (10 hours)
4. ANSI/RESNET/ACCA 310-2020 training by Building Science Education (6 hours)
5. ANSI/ACCA 12-2018 training by Building Science Education (6 hours)
6. Energy Modeler training by Building Science Education (7 hours)
7. HouseRater training by Building Science Education (2 hours)

### **Energy Code Compliance Specialist Required Assessments**

1. ICC-proctored Plans Examiner/Energy Code Inspector exam
2. 10 energy models in HouseRater (plans & specs provided by Building Science Education), evaluated by Quality Assessor or Quality Assessment Designee credentialed by the Building Science Institute
  1. 2 single story

2. 2 2-story
3. 2 duplexes
4. 2 townhouses
5. 2 apartment units

3. 5 pre-drywall/insulation verifications mentored by Quality Assessor or Quality Assessment Designee credentialed by the Building Science Institute
4. 5 final verifications mentored by Quality Assessor or Quality Assessment Designee credentialed by the Building Science Institute

### **Energy Code Compliance Specialist Competencies**

Energy Code Compliance Specialists must demonstrate knowledge of:

- ICC International Energy Code, 2018
- ANSI/RESNET/ICC 301-2019
- ANSI/RESNET/ICC 380-2019
- ANSI/RESNET/ACCA 310-2020
- HouseRater
- residential construction systems
- operation of processes
- delivery of services
- defects which may occur during construction of a dwelling unit
- failures in the operation of a process
- deficiencies in the delivery of services
- building science
- significance of deviations found with regard to energy code, residential construction specifications, operation of processes, and the delivery of services

### **Energy Code Software Analyst**

Energy Code Software Analysts credentialed by the Building Science Institute are qualified to perform software analysis in conformance with ANSI/RESNET/ICC 301-2019, 380-2019, and ANSI/RESNET/ACCA 310-2020; and perform software analysis for the ICC Energy Code Prescriptive, UA, Cost Performance, and ERI compliance paths. They are NOT qualified to perform verifications, testing, or software analysis on ENERGY STAR certified homes.

### **Energy Code Software Analyst Required Training**

Prior to credentialing, candidates must successfully complete the following training programs:

1. ICC-approved Plans Examiner (2 hours)
2. Software analyst specific ANSI/RESNET/ICC 301-2019 training by Building Science Education (12 hours)
3. ANSI/RESNET/ACCA 310-2020 (4 hours)
4. Energy Modeler training by Building Science Education (7 hours)
5. HouseRater training by Building Science Education (2 hours)



## **Energy Code Software Analyst Required Assessments**

1. ICC-proctored Plans Examiner exam
2. 10 energy models in HouseRater (plans & specs provided by Building Science Education), evaluated by Quality Assessor or Quality Assessment Designee credentialed by the Building Science Institute
  1. 2 single story
  2. 2 2-story
  3. 2 duplexes
  4. 2 townhouses
  5. 2 apartment units

## **Energy Code Software Analyst Competencies**

Energy Code Software Analysts must demonstrate knowledge of:

- ICC International Energy Code, 2018
- ANSI/RESNET/ICC 301-2019
- HouseRater
- residential construction systems
- operation of processes
- delivery of services
- failures in the operation of a process
- deficiencies in the delivery of services

## **Energy Code Field Verifier**

Energy Code Field Verifiers credentialed by the Building Science Institute are qualified to perform verifications and testing in conformance with ANSI/RESNET/ICC 301-2019, 380-2019, and ANSI/RESNET/ACCA 310-2020; and perform inspections and testing for the ICC Energy Code Prescriptive, UA, Cost Performance, and ERI compliance paths. They are NOT qualified to perform verifications, testing, or software analysis on ENERGY STAR certified homes.

## **Energy Code Field Verifier Required Training**

Prior to credentialing, candidates must successfully complete the following training programs:

1. ICC-approved Energy Code Inspector (6 hours)
2. ANSI/RESNET/ICC 301-2019 Appendices A & B by Building Science Education (6 hours)
3. ANSI/RESNET/ICC 380-2019 training by Building Science Education (10 hours)
4. HouseRater training by Building Science Education (2 hours)

## **Energy Code Field Verifier Required Assessments**

Prior to credentialing, candidates must successfully complete the following assessments:

1. ICC-proctored Energy Code Inspector exam
2. 5 pre-drywall/insulation inspections mentored by Building Science Institute's True North Quality Management Services Quality Assessor or Quality Assessment Designee
3. 5 final inspections mentored by Building Science Institute's True North Quality Management Services Quality Assessor or Quality Assessment Designee

## Energy Code Field Verifier Competencies

Energy Code Field Verifiers must demonstrate knowledge of:

- ICC International Energy Code, 2018
- ANSI/RESNET/ICC 301-2019, Appendices A & B
- ANSI/RESNET/ICC 380-2019
- HouseRater
- residential construction systems
- operation of processes
- delivery of services
- defects which may occur during construction of a dwelling unit
- failures in the operation of a process
- deficiencies in the delivery of services
- building science
- significance of deviations found with regard to energy code, residential construction specifications, operation of processes, and the delivery of services

## Recognition of Other Certifications or Credentials

Current RESNET certifications are considered by Building Science Education to determine required training and assessments needed to become credentialed by the Building Science Institute.

Qualifications such as an ICC certification as a Residential Building Inspector or Plans Examiner/Energy Code Inspector, or registered/licensed engineer or architect are considered by Building Science Education to determine required training and assessments needed to become credentialed by the Building Science Institute.

Recognition is considered on a case-by-case basis.

## Continuing Education

All individuals credentialed by the Building Science Institute must complete 6 hours of continuing education per calendar year to maintain their credential.

The intent of this requirement is to promote life-long learning.

Continuing education courses must be approved by the Building Science Institute's Building Science Education and may include topics on residential construction, building science, business, leader development, personal development, and may also include attending conferences and webinars.

Proof of completion must be submitted to the Building Science Institute.

In addition, individuals credentialed as Quality Assessment Designees may satisfy this requirement by writing a case study on quality management based on their experience during the calendar year for publication on the Building Science Institute website and dissemination to the broader quality management community.

Approved by Building Science Institute Quality Council October 26, 2021

Not Voting: Brett Dillon

Approve: Kevin Burk, Brian Christensen, Mat Gates, Amber Wood

Reject: None

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