



# PROGRAM DESCRIPTION

## Council-certified Environmental Thermography Investigator

# CETI

The American Council for Accredited Certification offers the Council-certified Environmental Thermography Investigator (CETI) to individuals with expertise in the fundamental principles of infrared thermography as they apply to the building sciences.

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### Objectives of the CETI Program:

- To raise the standards of those engaged in environmental thermography.
  - To identify persons with acceptable knowledge of environmental thermography and the standards and regulations affecting Council-certified Environmental Thermography Investigators.
  - To award special recognition to those Environmental Thermography Investigators who have demonstrated verifiable field experience.
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### Eligibility:

Applicants for the CETI certification must demonstrate academic- and experience-related eligibility.

Applicants must possess one of the following combinations of two (2) years education and relevant field experience:

- A 2-year post-secondary degree or its equivalent (15 credit hours) in engineering, science, architecture, industrial hygiene or related field of science with a minimum of one (1) year of documented field experience in environmental thermography.
- No degree, with at least two (2) years of documented field experience in environmental thermography. (High school diploma or GED required.)

Experience should include investigations, consulting and/or report writing and must be documented by verifiable investigation reports or building investigation contracts included with the application packet (see "Required Documentation" below).

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### The Required Body of Knowledge:

The effective practice of environmental thermography requires specialized knowledge of a variety of subjects, including current standards and best practices. For certification purposes, the candidate for the CETI designation must demonstrate familiarity with the basic concepts and reference materials of the industry, such as those summarized in the following list.

- American Council for Accredited Certification, Code of Conduct, [www.acac.org](http://www.acac.org)
- Robert Wayne Ruddock, *Basic Infrared Thermography Principles* (Ft. Myers: Reliabilityweb.com, 2010).
- The Snell Group and Fluke Corporation, *Introduction to Thermography Principles* (Orland Park, Ill: American Technical Publishers, 2009).
- NIOSH *Respirator Selection Logic* (2004)

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**The Required Skills:**

A Council-certified Environmental Thermography Investigator (CETI) has demonstrated the following skills through a combination of documented experience, documented education and training and the successful completion of an examination process.

**Apply basic principles of thermal and infrared physics to building investigations**

- The Physics of Energy
- Infrared Instruments
- Principles of Thermal Imaging
- Infrared System Parameters
- Interpretation of Infrared Images
- Basic Principles of Thermodynamics
- Material Thermal Properties
- Heat Transfer

**Choose, calibrate and operate infrared equipment effectively**

- Understand hardware used in infrared thermography
- Choose an infrared camera
- Operate an infrared camera
- Optimize an infrared image
- Overcome common obstacles to effective camera operation

**Conduct effective building investigations using infrared thermography**

- Utilize and manipulate thermal windows to collect useful infrared data
- Conduct infrared investigations of building exteriors
- Conduct infrared investigations of roof structures
- Conduct infrared investigations of building electrical systems
- Conduct infrared investigations of building interiors

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**The Certification Process:**

1. Complete and forward the notarized application and project sheets and a copy of diploma or transcripts. Incomplete applications will not be forwarded to the Certification Board for review.
2. Pass the closed-book examination. If the examination is not successfully passed, a mandatory 15-day waiting period and re-examination fee of \$100 is required before retaking the examination. A maximum of four examinations may be attempted.
3. Applicants have up to 90 days from the date of application to complete the application process. Applications left incomplete after 90 days will be considered null and void.
4. Wait for the awarding of the certification. The Certification Board will meet approximately every four (4) weeks to review the examination results and supporting materials before voting to award the certification.

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**The Application:**

The Application Form provides an area for contact information, academic information and experience background. We strongly recommend a notarized application be sent to the Council office prior to the examination, so that the certification staff may review and prepare the applicant's file for Board review.

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**Required Documentation:**

The applicant must provide documentation of field experience in environmental thermography. Acceptable forms of project documentation include:

- Pages from a contract to perform a building investigation which names the applicant as the investigator and includes evidence that infrared thermography services were performed by the applicant;
- Pages from a building investigation report that names the applicant as the investigator, includes the location and date of investigation and includes evidence that infrared thermography services were performed by the applicant.

The applicant must submit documentation of FOUR separate projects.

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**The CETI Examination:**

1. Applicants must complete a 3-hour, closed-book, written examination. The examination questions are based on the listed core skills and required body of knowledge. For an updated list of exam topics and item references to use in test preparation, visit [www.acac.org](http://www.acac.org).
  2. The examination is closed-book! It is strongly recommended that candidates read the reference materials listed above before taking the examination.
  3. There are 120 questions on the examination. Each question is multiple-choice with at least four (4) possible answers. A score of 75% must be achieved to pass this examination.
  4. The examination is delivered electronically at an authorized testing center operated by Kryterion, Inc. There are no paper exams. Once a complete application packet is on file in the Council office, the candidate may register for the examination by calling the office at (888) 808-8381.
    - Candidates should arrive 30 minutes before the testing appointment.
    - Candidates must present two forms of government-issued identification at the testing center, one of which must be picture ID.
    - Candidates must follow proctor instructions with regard to the use of personal belongings and test materials.
    - Candidates failing to abide by these rules will not be permitted to sit for the exam, and a re-examination fee of \$100 will be required.
  5. All examinations contain the same questions; however, the examination questions are presented to each candidate in random order and the examination answers are presented to the candidate in random order.
  6. Examinations are graded electronically at the testing facility, and scores are available to candidates immediately. An email is sent to the candidate's email address confirming test results.
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**The Certifying Body:**

1. The American Council for Accredited Certification (ACAC) is the certifying body for this program.
2. All decisions regarding application materials, examinations and the awarding of certifications are made by the CETI Certification Board, which functions as part of the American Council for Accredited Certification.
3. The certifying body's responsibility to applicants is to provide a credible certification. Operation of the certification program is closely monitored to ensure that reference materials remain current with the industry guidelines and standards and the eligibility requirements for

certification are at appropriate levels. Examination questions are developed by certified CETIs who are currently active in the field of environmental thermography. Pass/fail scores are set by the CETI Certification Board at the ACAC annual meeting using the modified Angoff method. The Board authorizes an annual statistical review of examination item performance and test reliability and updates the examination to reflect the latest changes in our rapidly evolving field.

4. The CETI certification is valid for two (2) years, after which time re-certification is required.
  5. Certification Board members are required to abstain from voting on any applicant's completed file that may present a conflict of interest, either personally or professionally.
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#### **Re-certification:**

ACAC certifications are current for two years from the date of issue. The certificate holder must accumulate forty (40) Re-certification Credits (RCs) prior to the certificate's expiration date. Each RC represents one (1) hour of continuing education in a Council-registered activity. The certificate holder may accumulate the required 40 hours at any time during the two-year certification period. An updated list of activities which qualify for RCs is available on the ACAC website at [www.acac.org](http://www.acac.org).

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#### **Due Process Procedures:**

1. The CETI Certification Board is responsible for all facets of the certification program, including the review and evaluation of applications, the development and administration of examinations, the granting and reissuing of certificates and the adjudication of complaints against certificants.
2. **Suspensions:** If a Council-certified Environmental Thermography Investigator does not accumulate the required re-certification credits, certification shall terminate unless, in the judgment of the Certification Board, extenuating circumstances exist and the deficiency can be readily overcome. Examples of extenuating circumstances include documentation of active military service or documentation of a serious medical condition.
3. **Complaints:** If a Council-certified Environmental Thermography Investigator fails to abide by the ACAC Code of Conduct or is formally accused of gross negligence in the performance of his or her professional duties, the Certification Board may vote to refuse re-certification.
4. **Appeals:** Any holder of a valid Council certification or applicant for such a certification may appeal the decisions of the Certification Board.
5. Complaints or appeals shall be made in writing via certified mail to the Certification Administrator.
6. In the case of complaints, the Certification Administrator shall forward the complaint to the accused certificant and allow him or her ample time to respond.
7. The Certification Administrator, at the direction of the Executive Committee, may forward complaints or appeals to the appropriate Certification Board.
8. The Certification Board shall rule on all complaints or appeals by unanimous vote.
9. Complaints or appeals may be continued in writing via certified mail to the National Advisory Board.
10. The National Advisory Board shall be the final court of appeal and will rule on complaints or appeals by unanimous vote.
11. In resolving complaints or appeals, ACAC may rule only on its own decisions to grant or deny certification and recertification.

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**Reinstatement of the CETI:**

Council-certified Environmental Thermography Investigators who do not acquire sufficient CETI Re-certification Credits by their recertification date will be notified in writing to cease using the CETI designation. They will be listed as expired on the Council website and will no longer be listed as a CETI in any ACAC publication until such time as they resubmit to the certification process and successfully meet the current criteria for certification. Appropriate fees will apply.

**Fees:**

*Corporate purchase orders, checks, Visa, MasterCard and American Express are accepted.*

**Certification Fee: \$400 for a two-year certification**

- Certification fee includes a \$100 non-refundable processing fee.

**Examination Fee: \$100**

- Examination and certification fees are required prior to taking examinations.

**Re-certification Fee: \$400**

- Re-certification is for a two-year period and requires documentation of continuing education. Re-certification fees include a \$100 non-refundable processing fee.

**Re-examination Fee: \$100.**

- For those who failed a previous exam

**Penalties: \$100 for late re-certification.**

- May be waived in case of documented active military duty or medical issues

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**Emeritus (Retired) Status:**

1. Retired Council-certified Environmental Thermography Investigators who are at least 62 years of age may be granted emeritus status in their designation as long as they are no longer engaged in professional practice as a CETI. Such persons will be granted the title "Emeritus".
2. Re-certification Fees for Emeritus (Retired) Status: **\$100** USD for each two-year certification.
  - A photocopy of a current driver's license must accompany the request for Emeritus Status.
3. Continuing education is not required.
4. To return to active status, emeritus certificants must notify the ACAC in writing and pay a \$50 fee for a two-year active certification. At the end of the two-year period, all normal re-certification policies will apply.

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**Use of the CETI Designation:**

- A Council-certified Environmental Thermography Investigator may use the designation with his/her name on organization letterheads, business cards and all forms of address. When using the CETI designation, we encourage the spelling out of the designation fully in smaller print immediately below the signature block, as in the following example:

John Doe, CETI  
Council-certified Environmental Thermography Investigator  
Board-awarded by the American Council for Accredited Certification

- Certification is for individuals only. The CETI designation may not be used to imply that an organization or firm is certified.

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**ACAC Code of Conduct:****▪ Objective**

The objective of this code is to provide guidance for appropriate conduct for the certificants of the American Council for Accredited Certification as they engage in their individual professions.

**▪ Rules of Conduct**

Certificants of the American Council for Accredited Certification shall:

- Practice their respective professions following accepted industry standards and guidelines.
- Exercise caution not to misrepresent their credentials, training or experience in the course of their professional activities.
- Deal responsibly in advising parties regarding potential damage to property and/or risk to health.
- Maintain confidentiality concerning both personal and business information gathered in the performance of their professions, except in the case of overriding legal and/or health concerns.
- Avoid instances where conflict of interest or compromise of professional judgment may occur.
- Act with integrity to uphold the standards of their profession and of the Council and avoid any conduct that could adversely reflect on the Council and its certificants.

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We reserve the right to change/update our certification examination material, eligibility requirements and re-certification requirements at anytime we deem necessary to maintain the professional integrity and validity of our certification.

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