



# Refrigerating Engineers & Technicians Association

## **Certification Information for:**

Certified Assistant Refrigeration Operator (CARO)

Certified Industrial Refrigeration Operator (CIRO)

## **Information Handbook and Application Form**

Valid for examinations offered April 1, 2009 through June 30, 2009

## Table of Contents

<b>INTRODUCTION</b>	1
<b>OBJECTIVES</b>	1
<b>CERTIFICATION PROGRAMS</b>	1
<b>Do I Need to Study Anything to Take the Test?</b>	1
<b>CERTIFIED ASSISTANT REFRIGERATION OPERATOR (CARO)</b>	1
CARO EXAMINATION DESCRIPTION	1
CARO EXAMINATION CONTENT	2
<b>CERTIFIED INDUSTRIAL REFRIGERATION OPERATOR (CIRO)</b>	2
<i>CIRO EXAMINATION DESCRIPTION</i>	2
CIRO EXAMINATION CONTENT:	3
<b>HOW EACH EXAMINATION IS GIVEN</b>	3
<b>RETA CODE OF CONDUCT</b>	4
<b>ADHERING TO THE RETA CODE OF CONDUCT</b>	4
<b>ELIGIBILITY FOR RETA CERTIFICATION</b>	5
<b>CANDIDATE BEHAVIOR DURING RETA CERTIFICATION EXAMINATIONS</b>	5
<b>DISCIPLINARY ACTION</b>	5
<b>COMPLETING THE APPLICATION FORM</b>	5
<b>RESCHEDULING AN EXAMINATION</b>	6
<b>NO SHOW OR WITHDRAWAL</b>	6
<b>EXAMINATION PERMIT</b>	6
<b>TAKING THE TEST AND RECEIVING YOUR SCORES</b>	6
<b>RENEWAL OF CERTIFICATION</b>	6
<b>EXAMINATION FEE</b>	7
<b>RE-EXAMINATION</b>	7
<b>CONFIDENTIALITY AND PUBLIC INFORMATION</b>	7
<b>CHALLENGES TO QUESTIONS</b>	7
<b>APPEALING SCORES</b>	7
<b>REQUESTS FOR SPECIAL ACCOMMODATIONS</b>	7
<b>IMPROPER USE OF RETA IDENTIFICATION AND CERTIFICATION</b>	8
<b>CERTIFICATION EXAMINATION APPLICATION</b>	9
<b>EXAMINATION FEE</b>	9
<b>VERIFICATION OF EXPERIENCE FOR CERTIFIED INDUSTRIAL REFRIGERATION OPERATORS (CIRO)</b>	11
<b>APPLICATION CHECKLIST</b>	12
<b>REFERENCES AND TRAINING OPTIONS TO PREPARE FOR RETA EXAMINATION</b>	13

The Refrigerating Engineers and Technicians Association does not discriminate on the basis of age, sex, race, creed, disabling condition, religion, national origin, or any other protected characteristic.

## INTRODUCTION

The Refrigerating Engineers and Technicians Association (RETA) was established in 1910. RETA's mission is to enhance the professional development of industrial refrigeration operators and technical engineers.

Certification is a process that recognizes an individual's qualifications and demonstrated knowledge. The RETA certification program was first offered in 1988. RETA Certification is available at two levels: Certified Assistant Refrigeration Operator (CARO) and Certified Industrial Refrigeration Operator (CIRO).

Certification is based on knowledge shown by meeting designated eligibility requirements and passing the certification examination. The certification process helps individuals improve their skills and provides employers with a benchmark for evaluating job applicants and employees. Certification provides third-party validation that an operator or assistant operator has met standard requirements for experience and knowledge.

## OBJECTIVES

The objectives of the certification program are:

- To establish a nationally recognized standard of experience, education, and training for refrigeration plant operators and supervisors.
- To assist the refrigeration industry in developing and recognizing qualified refrigeration plant operators and supervisors.
- To encourage technical training and education, as well as practical experience, for refrigeration plant operators and supervisors.
- To promote safety in industrial refrigeration facilities.
- To increase public recognition of the skills needed in the industrial refrigeration field.

## CERTIFICATION PROGRAMS

RETA offers certification at two levels, the Certified Assistant Refrigeration Operator for operators new to the field and the Certified Industrial Refrigeration Operator for operators with two or more years' experience.

## Do I Need to Study Anything to Take the Test?

CARO and CIRO assess your knowledge of industrial refrigeration operation, theory, process and safety in and around a system. You may take CARO or CIRO without purchasing or reviewing RETA references or other source materials but your chances of meeting RETA certification standards may improve if you review appropriate information before taking the test. Completing a study course does not guarantee success passing any RETA certification test.

### CERTIFIED ASSISTANT REFRIGERATION OPERATOR (CARO)

The Certified Assistant Refrigeration Operator (CARO) is an entry-level examination designed to identify whether an operator has the basic knowledge to function safely in an engine room under the supervision of a more experienced operator. There are no minimum experience requirements.

### CARO EXAMINATION DESCRIPTION

The CARO examination is based on practical experience and RETA's technical courses as outlined on page 2. The test consists of 100 multiple-choice items. You will have three hours to complete the test, which is given in English. You must answer at least 70% of the questions correctly in order to pass the examination.

The CARO Exam Supplement includes information you will need to take the Refrigerating Engineers & Technicians Association Certified Assistant Refrigeration Operator (CARO) examination. You may print as many of the Website Study Copy of the CARO Exam Supplement as you wish to help you prepare for the test, but you may not use a study copy during the test.

***RETA WILL SEND A SEALED COPY OF THIS SUPPLEMENT TO YOU AFTER YOU ARE APPROVED TO TAKE THE TEST. BRING THE SEALED COPY WITH YOU TO THE TESTING CENTER.***

**THE ENVELOPE CONTAINING YOUR EXAM COPY OF THE CARO SUPPLEMENT MUST BE OPENED ONLY BY AN EXAM PROCTOR AT THE TEST CENTER ON THE DAY YOU TAKE**

**THE TEST. IF THE SEAL IS BROKEN OR ALTERED, YOU WILL HAVE TO TEST WITHOUT THE SUPPLEMENT OR FORFEIT THE SEAT TIME AND FEE FOR THIS TEST.**

**YOU ALSO MUST SURRENDER THE CARO EXAM SUPPLEMENT AND ANY NOTES YOU MAKE DURING THE TEST BEFORE YOU CAN RECEIVE YOUR SCORE FOR THIS EXAM.**

#### **CARO EXAMINATION CONTENT:**

The CARO examination is based on concepts presented in the following RETA texts:

- *Industrial Refrigeration I*
- *Industrial Refrigeration IV* (safety section only)

Other publications are available that introduce the content areas examined in the CARO test. RETA does not endorse or guarantee that all content areas in the CARO exam are covered in these materials. See the last page of this handbook for a list of alternative study references and training options.

The following content areas are in the CARO examination. The percentage of the examination devoted to each content area is shown below.

Refrigeration fundamentals	11%
Refrigeration cycle	9%
Properties of refrigerants	8%
Saturated refrigerant tables	2%
Types of refrigerant compressors	7%
Operation and maintenance of compressors	13%
Lubrication	16%
Evaporators and cooling units	9%
Condensers and high-pressure receivers	11%
Purging	4%
Safety, hazards, and prevention	10%

The preceding outline is based on a 2003 job practices study of refrigeration operators.

#### **CERTIFIED INDUSTRIAL REFRIGERATION OPERATOR (CIRO)**

- A minimum of two years of verified experience in industrial refrigeration plant operation is required. This experience must include demonstrated ability to properly operate a plant to provide refrigeration, heat, air conditioning,

and/or ventilation as required for safe and efficient operation through proper maintenance and operating procedures.

- Satisfactory completion of the following RETA industrial refrigeration courses is suggested but does not guarantee a passing score on the CIRO Exam:

- *Industrial Refrigeration I*
- *Industrial Refrigeration II* (systems)
- *Industrial Refrigeration IV* (plant operation and safety)
- *Basic Electricity I*
- *Basic Electricity II* (ladder diagrams)
- *Control Theory & Fundamentals I*
- *Control Theory & Fundamentals II*

Other publications are available that introduce the content areas examined in the CIRO test. RETA does not endorse or guarantee that all content areas in the CIRO exam are covered in these materials. See the last page of this handbook for a list of alternative study references and training options.

#### **CIRO EXAMINATION DESCRIPTION**

The certification examination is based on practical experience and RETA's technical courses as outlined above. The test consists of 125 multiple-choice items and is approximately 3 hours in length. The examination is given in English. You must answer at least 70% of the questions correctly in order to pass the examination.

The CIRO Exam Supplement includes information you will need to take the Refrigerating Engineers & Technicians Association Certified Industrial Refrigeration Operator (CIRO) examination. You may print as many of the Website Study Copy of the CIRO Exam Supplement as you wish to help you prepare for the test, but you may not use a study copy during the test.

***RETA WILL SEND A SEALED COPY OF THIS SUPPLEMENT TO YOU AFTER YOU ARE APPROVED TO TAKE THE TEST. BRING THE SEALED COPY WITH YOU TO THE TESTING CENTER.***

**THE ENVELOPE CONTAINING YOUR EXAM COPY OF THE CIRO SUPPLEMENT MUST BE**

**OPENED ONLY BY AN EXAM PROCTOR AT THE TEST CENTER ON THE DAY YOU TAKE THE TEST. IF THE SEAL IS BROKEN OR ALTERED, YOU WILL HAVE TO TEST WITHOUT THE SUPPLEMENT OR FORFEIT THE SEAT TIME AND FEE FOR THIS TEST.**

***YOU ALSO MUST SURRENDER THE CIRO EXAM SUPPLEMENT AND ANY NOTES YOU MAKE DURING THE TEST BEFORE YOU CAN RECEIVE YOUR SCORE FOR THIS EXAM***

The examination format includes independent questions and scenarios based on generic screens (see sample on page 3). The supplemental package will be collected by the proctor after you have finished testing.

You may bring and use a hand-held calculator during the examination.

**CIRO SCREEN 4**

RECIPROCATING COMPRESSOR – NH3 NORMAL CONDITIONS			
SUCTION PRESSURE	33 PSIG	COMPRESSOR MOTOR AMPS	145 AMPS
DISCHARGE PRESSURE	151 PSIG	COMPRESSOR MOTOR VOLTAGE	480 VAC
OIL PRESSURE	45 PSID	COMPRESSOR LOADING	100%
SUCTION TEMP	22°F	CONDENSER WATER SUMP TEMP	72°F
DISCHARGE TEMP	213°F	CONDENSER LIQUID TEMP	85°F
NOTES: POWER FACTOR IS 0.82		MOTOR TYPE IS 3 PHASE	
MOTOR EFFICIENCY IS 92%		CONDENSER TYPE IS EVAPORATIVE	
COMPRESSOR WATER COOLED		CONDENSER OUTLET NOT SUBCOOLED	

RECIPROCATING COMPRESSOR – NH3 ABNORMAL CONDITIONS			
SUCTION PRESSURE	33 PSIG	COMPRESSOR MOTOR AMPS	145 AMPS
DISCHARGE PRESSURE	151 PSIG	COMPRESSOR MOTOR VOLTAGE	480 VAC
OIL PRESSURE	45 PSID	COMPRESSOR LOADING	100%
SUCTION TEMP	60°F	CONDENSER WATER SUMP TEMP	72°F
DISCHARGE TEMP	269°F	CONDENSER LIQUID TEMP	85°F
NOTES: POWER FACTOR IS 0.82		MOTOR TYPE IS 3 PHASE	
MOTOR EFFICIENCY IS 92%		CONDENSER TYPE IS EVAPORATIVE	
COMPRESSOR WATER COOLED		CONDENSER OUTLET NOT SUBCOOLED	

**CIRO EXAMINATION CONTENT:**

The following content areas are in the CIRO examination. The percentage of the examination devoted to each content area is indicated.

- Fundamentals & Introductory Concepts 23%
  - Refrigeration cycle, refrigerant properties & tables, condensers & high-pressure receivers, purging, compressor types & operation, lubrication, evaporators & cooling units.
- Safety Standards & Procedures 10%
  - Safety procedures & information

- Electricity 7%
  - Motor operation, test instruments & controls, reading ladder diagrams
- Refrigeration System Operations 44%
  - Valves & controls, two-staged refrigeration system operations, other refrigeration system operations, heat flow of refrigeration systems, troubleshooting.
- Measuring System Performance 16%
  - Output measurements (HP, BTUs, HP/ton, etc.) cost and efficiency (KwH, KW, Kw/ton, etc.) compression ratios.

The preceding outline is based on a 2003 job practices study of refrigeration operators.

**HOW EACH EXAMINATION IS GIVEN**

RETA offers the examinations through a computer based administration company. There are more than 200 centers in the United States. The Certification Page of the RETA website helps you find the test center closest to your area.

The test center uses computers on which you take the exam. The exam is multiple choice. You answer each question by clicking the response you choose.

The application form is available on the RETA.COM website. You may download and print this application form to apply. After you fill out the application form, send it and the money to pay for the test to RETA Headquarters. RETA staff will review the form and contact you if there are any corrections or clarifications required.

After everything is completed and verified, RETA Headquarters will send you a letter giving you the contact information you need to make your appointment with the testing center of your choice. You then make an appointment with the test center to take the exam. The testing center will be expecting your call. You can locate the test centers that are closest to you on the RETA website before you call for an appointment or testing center staff will do this for you as you are selecting a test center, date and time for the test.

## RETA CODE OF CONDUCT

The RETA Code of Conduct sets the professional standards required of all RETA members and certificate holders. RETA certification and membership affirms your agreement to abide by these standards to advance the integrity, honor and prestige of all persons and organizations in the refrigeration industry. By signing the RETA Code of Conduct you agree to strive to meet the following professional standards of behavior:

1. I recognize the urgency of protecting the health and safety of all personnel in refrigeration facilities and the public and agree to safely handle and operate refrigeration equipment and supplies at my level of knowledge, skill and experience.
2. I accept responsibility for assuring that those persons for whom I am responsible will be qualified by training, education and experience to operate the specific equipment in the refrigeration facility at which I am employed.
3. I will promote training and education of those refrigeration personnel with whom I come in contact to assure that they are qualified to maintain and improve the safety and energy-efficient operation of refrigeration facilities for which they have any responsibility.
4. I accept responsibility for my own continued professional development as well as that of those I supervise and will participate in appropriate certification and training activities to acquire, demonstrate and maintain competence in the refrigeration industry.
5. I will comply with all laws, rules and regulations that apply to safe operation of refrigeration facilities.
6. I will act responsibly and with integrity in all refrigeration industry and RETA activities by adhering to high standards of professional conduct to protect the health and safety of employees, employers, the public and all others affected by refrigeration facilities and practices.
7. I will avoid conduct or practices that could discredit the refrigeration industry like deceiving or harming employees, employers or the public.
8. I will provide accurate and truthful

information related to all aspects of my RETA membership, certification and refrigeration training and experience.

9. I will follow all requirements established by RETA regarding references to my RETA certification and membership when describing my qualifications, training and experience in the refrigeration industry.
10. I will cooperate with RETA in any investigation of test security, validity, conflicts of interest or possible violations of the RETA Code of Conduct that warrants my participation.
11. I will maintain open and constructive relationships with those governmental and regulatory authorities relevant to the refrigeration industry with the intent of fostering an atmosphere of mutual trust and respect on behalf of myself and those for whom I am professionally responsible.
12. I will refuse to engage in any behavior that could be perceived as a threat to the health and safety at refrigeration facilities, of other employees and the public. This includes but is not limited to problems with chemical dependency, substance abuse, verbal threats or physical violence that could adversely affect the safety of refrigeration facilities.
13. I will support RETA local chapters to advance local influence and adherence to the RETA Code of Conduct.

## ADHERING TO THE RETA CODE OF CONDUCT

All activities of the Refrigerating Engineers and Technicians Association (RETA) shall be conducted with policies and procedures consistent with RETA Bylaws and the RETA Code of Conduct. The RETA Code of Conduct shall apply to all RETA members, directors, officers, staff, task force members, certification candidates, certificate holders, employees and consultants. The RETA Code of Conduct is intended to maintain the confidence and respect of industry employers and their employees. It also is intended to protect the public's health and safety as well as every person in a position of responsibility in the refrigeration industry.

## **ELIGIBILITY FOR RETA CERTIFICATION**

No individual is eligible for RETA certification unless he/she is in compliance with the RETA Code of Conduct. RETA may deny, revoke, suspend, or otherwise act upon certification or membership of any individual who is not in compliance with the RETA Code of Conduct.

1. The individual must truthfully complete and sign the RETA application for certification and shall provide additional information as requested. All documents and information provided to RETA as part of the certification process are the property of RETA and will not be returned.
2. All RETA members, certification candidates and certificate holders agree to waive all claims against and will hold harmless RETA, its staff, volunteers and agents which arise out of or relate to any RETA investigation and review of alleged violations of the RETA Code of Conduct.

## **CANDIDATE BEHAVIOR DURING RETA CERTIFICATION EXAMINATIONS**

Any use of unauthorized materials during administration of a RETA certification examination may result in immediate disqualification and an automatic failing score. RETA may withdraw eligibility for certification from any candidate who uses prohibited materials during an examination, has any unauthorized contact with anyone other than test center staff during an examination, or engages in other unethical, disruptive or unprofessional behavior at a test center.

In order to protect the validity and security of RETA testing and certification programs, misconduct or suspicious circumstances may render a test score invalid. If doubts are raised about a score because of these or other circumstances, RETA expects cooperation in any RETA investigation of possible violations of test validity and security. RETA reserves the right to cancel any exam score if, in the sole opinion of RETA, there is adequate reason to question its validity. RETA, in its discretion, may offer the individual an opportunity to take the examination again at no additional fee, offer the individual an opportunity to take the examination again including payment of all fees, or proceed with

disciplinary action as described in these procedures. Following any administrative exam irregularities, the Executive Director, on advice from the Consulting Psychometrician, will review the matter and decide whether to cancel scores, and whether the candidate may be offered a retest at RETA expense or at his/her expense. Such actions may be subject to appeal as described in these procedures.

## **DISCIPLINARY ACTION**

RETA may reject or suspend the eligibility of any certification candidate, suspend or revoke the certification of any certificate holder, or refuse to recertify any person who is found to have engaged in any of the following violations or any part of the RETA Code of Conduct:

1. Obtaining or seeking to obtain RETA certification through submission of fraudulent, misleading or untruthful statements or documentation of qualifications, training and experience.
2. Unauthorized possession or use of RETA examination materials in any form, including but not limited to recreating from memory, copying, posting on any website, reproducing or disclosing to others any examination question or test-related materials or content not released by RETA to all certification candidates.
3. Any conviction for criminal acts in connection with activities for which the individual is certified by RETA, including but not limited to drug- or alcohol-related offenses which could make the RETA-certified individual a possible threat to the health and safety of refrigeration facilities, other employees and the public.
4. Unauthorized or illegal use of any registered certification mark or logo owned by RETA.

*RETA Disciplinary Policy and Procedures (available on the RETA website) provide detailed information for bringing charges and for hearings and appeals related to disciplinary charges.*

## **COMPLETING THE APPLICATION FORM**

Your RETA membership must be current at the time of application in order to qualify for the member rate. If your company is a corporate member, you (the certification applicant) must be

one of the company's designated members to qualify for the member rate.

1. Complete all sections of the application
2. Print or type all information except your signature.
3. If you are an RETA member, attach a photocopy of your current membership card to the application. This photocopy assists staff to ensure the correct processing of your application.
4. Include the appropriate application fee in the form of personal or company check, money order, or credit card information. Make your check payable to Refrigerating Engineers & Technicians Association. Purchase orders are not accepted.
5. Mail the application form with attachments and your payment to:

RETA Certification  
PO Box 1819  
Salinas, CA 93902

Your application will be considered incomplete if any of the information or the fee is not included. You will be informed of any steps needed to take to complete your application. Examination permits will be issued only to candidates with complete applications. RETA reserves the right to verify the eligibility of any applicant.

#### **Returned Check Fee \$35**

Any applicant whose personal check is returned for insufficient funds is required to pay this fee. Remittance of fees thereafter must be by money order or certified check.

### **RESCHEDULING AN EXAMINATION**

Candidates may reschedule a test by calling the test center up to three business days before the scheduled date of their test.

### **NO SHOW OR WITHDRAWAL**

You will forfeit all fees if you fail to show at the test center at the appointed time without rescheduling at least three business days before your scheduled test date. If you withdraw your application for RETA certification at least five business days before your scheduled test date, you may request a refund of up

to half the RETA application fee. If you are not able to test, you may not transfer your registration to another candidate.

### **EXAMINATION PERMIT**

If your application is complete, you will receive an examination permit by US mail. If you give us an email address we will notify you that the permit and supplemental package is on its way by email. The permit will provide the information you need to arrange your test experience. You will choose the location and will make an appointment with the test center. You will not be admitted to the examination without the permit and photo identification.

### **TAKING THE TEST AND RECEIVING YOUR SCORES**

Each question will appear on the test center screen one at a time. You can record your answer to each question, skip the question, or mark it for review. You can review questions you have skipped or marked for review at any time. After you indicate that you have finished answering and reviewing questions, you may end the test. The test will end automatically if your time expires.

After you finish the test, a message will appear on the screen with unofficial results of your examination. A short survey will follow to gather information about your RETA testing experience. You will be notified of your examination results immediately after the examination. A preliminary score report will be given to you at the testing center after you have taken the exam.

Your score report will tell you whether you passed or failed the examination, the percent of questions answered correctly and section subscores. A follow up report and your certificate will be sent out by Headquarters.

### **RENEWAL OF CERTIFICATION**

The RETA Code of Conduct requires all RETA certificate holders to participate in appropriate certification and training activities to acquire, demonstrate and maintain their competence in the refrigeration industry. Each RETA certificate expires three years after it is issued. Recertification

candidates may establish that their knowledge and skills are still current for their level of RETA certification either by taking the then current examination for that classification or by providing RETA with the required documentation of his/her qualifications for recertification.

Continuing education credits can be earned by documenting participation in professional training related to RETA certification at RETA chapter meetings, the RETA Annual Meeting, employer-sponsored training and refrigeration training seminars. Procedures for documenting training credits to apply for recertification are available on the RETA website at [www.RETA.com](http://www.RETA.com).

## **EXAMINATION FEE**

RETA member \$290  
Non-member \$390

Your RETA membership must be current at the time of application in order to qualify for the member rate. If your company is a corporate member, the certification applicant must be one of the company's designated members to qualify for the member rate.

## **RE-EXAMINATION**

If you do not pass the examination, you may take the examination again one time at one-half of the fee paid within one year following your initial test. To do so, you must submit a new application and fee. Minimum time between testing sessions is two weeks.

## **CONFIDENTIALITY AND PUBLIC INFORMATION**

To ensure the security of the examination, the test materials are confidential and individual results will not be released to any person or agency except the candidate and RETA. A candidate's individual test results will be released to others only upon the candidate's written request.

When an operator has achieved RETA certification, that fact is considered public information. It is RETA's policy to verify certification upon request. RETA does not provide information about

certification status other than whether an individual is certified.

## **CHALLENGES TO QUESTIONS**

Any candidate may challenge the validity of a question on a RETA examination at the end of the examination period by identifying the question number and describing why he/she thinks it is not appropriate in the space provided by the testing company for candidate comments.

RETA also conducts periodic statistical reviews of candidate performance on each question. If scoring adjustments result from these psychometric reviews, they are applied automatically to all candidate scores. Revised score reports are issued to any candidate whose status changes from fail to pass as a result of these procedures.

## **APPEALING SCORES**

An appeal procedure is available to individuals who wish to contest an adverse decision made by RETA.

Candidates do not have the right of appeal of actions: (1) resulting from failure to meet published procedure(s), or (2) based on RETA's actions in setting a passing score which resulted in the individual's failure to pass the certification examination.

Candidates may appeal the results of an examination in writing via U.S. Mail, facsimile or E-mail to RETA headquarters within 14 calendar days after their examination date. RETA will respond in writing to all appeals after review of the candidate's results by the RETA Certification Committee.

## **REQUESTS FOR SPECIAL ACCOMMODATIONS**

Candidates who are unable to complete a RETA certification examination under standard conditions must submit documentation to support their request for special accommodations. This request must specify the modifications of the examination procedure that they believe are appropriate and must be submitted with the initial application for RETA certification or recertification. RETA will evaluate each request to determine that it does not interfere with the candidate's ability to perform the work of a certified refrigeration professional.

Test centers may accommodate candidates with disabilities that interfere with test taking. Confirm with the testing center that they have the necessary fixtures and facilities to address your specific needs.

## **IMPROPER USE OF RETA IDENTIFICATION AND CERTIFICATION**

RETA examinations and their content are the property of RETA. These examinations are available only to those persons who desire in good faith to become certified by meeting RETA certification requirements. By applying for RETA certification, each candidate agrees to the following provisions.

1. Refrigeration professionals may use the Certified Assistant Refrigeration Operation (CARO) or the Certified Industrial Refrigeration Operator (CIRO) designations when they meet all requirements established by RETA. A CARO or CIRO certificate holder has demonstrated expertise gained from study, training and experience in the safe handling of materials and safe operation of refrigeration equipment and facilities.
2. All RETA examinations, certificates, cards, logos, patches and emblems and the names Certified Assistant Refrigeration Operator (CARO) and Certified Industrial Refrigeration Operator (CIRO) are property of RETA and may not be used in any way without the express written consent of RETA. Individuals who pass current RETA examinations must comply with RETA rules in all references to RETA certification.
3. Any individual RETA suspends, reprimands, limits or revokes from RETA certification or authorization due to failure to meet RETA requirements shall immediately relinquish, refrain from using and correct at their own expense any outdated, inaccurate or otherwise inappropriate use of any RETA certificate, card, logo, patch, emblem, and references to CARO, CIRO and RETA certification.
4. If the individual refuses to relinquish immediately, refrain from using and correct at his or her expense any misuse or misleading use of such items when requested, the individual agrees that RETA shall be entitled to obtain injunctive relief, damages costs and attorney's fees incurred in obtaining any such or other relief.

# Refrigerating Engineers & Technicians Association CERTIFICATION EXAMINATION APPLICATION

Please print or type all information. Mail completed application to **RETA Certification, PO Box 1819, Salinas, CA 93902**. Please call 831/455/8783 if you have questions regarding your application or membership status. Please be sure to return both pages of the application. **Faxed applications are not accepted. Penmanship counts – please be sure we can read your information correctly.**

\_\_\_\_\_  
Your Name Exactly as You Want it on Your Certificate

\_\_\_\_\_  
Your RETA Membership Number and Expiration Date:

\_\_\_\_\_  
Company

\_\_\_\_\_  
Business Address City State Zip

\_\_\_\_\_  
Home Address City State Zip

\_\_\_\_\_  
Home Phone Work Phone

\_\_\_\_\_  
E-mail address

\_\_\_\_\_  
Do you have a need for special accommodations at the testing center? Please describe what you need.

## EXAMINATION FEE

The fee must be in the form of personal or company check, money order, or credit card. Purchase orders are not accepted. Applications submitted without the fee will be considered incomplete and you will not be permitted to test until the fee is paid. Be sure to include your membership number (if applicable) and expiration date. For corporate memberships, the applicant must be one of the designated members to qualify for the member rate.

### CARO

Certified Assistant Refrigeration Operator

- \$290 RETA member  
 \$390 Non-member  
 Retesting Fee \$145 / \$195 non-member  
Previous test date: \_\_\_\_\_

### CIRO

Certified Industrial Refrigeration Operator

- \$290 RETA member  
 \$390 Non-member  
 Retesting Fee \$145 / \$195 non-member  
Previous test date: \_\_\_\_\_

Payment method:

- Check payable to Refrigerating Engineers & Technician Association  
 Credit card (VISA, MasterCard, American Express, Discover)

\_\_\_\_\_  
Credit card number Expiration date Security Code #

\_\_\_\_\_  
Signature Billing Address

**STATEMENT OF UNDERSTANDING**

(This section must be completed by all candidates)

I hereby apply for RETA certification and verify that all information provided is accurate. I understand that any misrepresentation on this application will result in failure to become certified, and my application and examination fee will be forfeited. I authorize the evaluation and validation of my credentials by RETA. In furtherance of my application, I authorize any individual or organization who may have information concerning my credentials to provide such information to RETA. I hereby waive any claim for damages that I may have against RETA and any individual or organization that supplies such information by reason of any act or omission by any of them taken in good faith in connection with this application. I understand that the decision as to whether I qualify for certification rests solely and exclusively in RETA and that its decision is final. By signing and submitting this application, I also agree adhere to the RETA Code of Conduct.

As a RETA Certified Professional I will:

- Comply with the relevant provisions of the RETA Certification program.
- Make no claims of being certified outside of the certification credential(s) I hold.
- Not use my RETA Certification status in any manner that brings disrepute to RETA or misrepresents RETA Certification with false or misleading statements.
- Not use my RETA Certification in a misleading manner.
- Discontinue my claim to RETA Certification if my certificate is revoked or if I fail to maintain my certificate through evidence of on-going training and the accrual of recognized Professional Development Hours and Continuing Education Units.

---

Signature Date

---

Print Name

**What material did you study to prepare for taking this examination? (check all that apply)**

<input type="checkbox"/> RETA IR-1	<input type="checkbox"/> <i>Modern Refrigeration &amp; Air Conditioning</i>
<input type="checkbox"/> RETA IR-2	<input type="checkbox"/> <i>Refrigeration and Air Conditioning Technology – 5<sup>th</sup> Edition</i>
<input type="checkbox"/> RETA IR-3	<input type="checkbox"/> <i>Refrigeration Equipment - A.C. Bryant</i>
<input type="checkbox"/> RETA IR-4	<input type="checkbox"/> <i>Refrigeration Principles, Practice &amp; Performance - C. Langley</i>
<input type="checkbox"/> RETA BE-1	<input type="checkbox"/> <i>Industrial Refrigeration Handbook - Wilbert Stoecker</i>
<input type="checkbox"/> RETA BE-2	<input type="checkbox"/> <i>TPC Training Series - SchoolCraft</i>
<input type="checkbox"/> RETA IR-1 – Spanish	<input type="checkbox"/> IIR Andy Ammonia Series
<input type="checkbox"/> RETA Control Theory & Fundamentals 1& 2	<input type="checkbox"/> None
<input type="checkbox"/> Introduction to the CIRO Supplement Package	<input type="checkbox"/> Other (Please identify) _____
	_____

## Verification of experience for Certified Industrial Refrigeration Operators (CIRO)

(Do NOT fill out this section if you are applying for the Certified Assistant Refrigeration Operator (CARO) examination.)

This section must be completed by a supervisor, superior, or colleague for all CIRO candidates.

I hereby verify that this candidate has completed at least two years' experience in industrial refrigeration plant operation or services as a technician. This experience includes maintenance, service, troubleshooting, system start-ups and/or direct supervision of any of these areas. I have personal knowledge of this experience. Please print or type in the information below:

---

Name

---

Position

---

Company

---

Phone

---

Signature

Date

## Application checklist

Be sure to:

- Fill out the application form completely.
- Obtain verification of experience if you are applying for CIRO certification.
- Include your payment.
- Mail to:  
RETA Certification  
PO Box 1819  
Salinas, CA 93902
- Download the supplemental packet from the website that is for the level of examination you are taking and use that information to study from as you prepare to take the exam.
- Follow the instructions that accompany the RETA Certification Exam permit that is sent to you from headquarters.
- Locate available Test Centers on the RETA website at [www.RETA.com](http://www.RETA.com) by entering the zipcode where you prefer to take the examination. Call the 800 number provided by the testing company to schedule your exam. Do not call the local testing center – they will not be aware of your intentions.
- Bring your RETA provided permit and supplemental packet to the exam center on the day you test.
- Bring at least one government-issued form of photo identification such as a driver's license or passport to the test center.
- Report to the test center 15-20 minutes before your appointment. Bring your RETA provided permit and supplemental packet to the test center.

# References and Training Options to Prepare for RETA's CARO and CIRO Examinations

Several pathways exist to enable RETA certification candidates to acquire the knowledge and skills required to pass the CARO and CIRO examinations. While RETA neither endorses nor guarantees that these study materials include all of the content areas in the CARO and CIRO examinations, candidates who cannot or do not wish to use RETA course books can prepare for RETA certification using other materials such as these. Successful completion of a study course or review of materials such as these does not guarantee a passing score on any RETA certification examination.

## Alternate References and Training

1. *Refrigeration Principles, Practice and Performance* (2007). Chris Langley. Thomson Delmar Learning.
2. *Modern Refrigeration and Air Conditioning*, 2004 Edition (2004). Andrew Althouse, et. al. Thomson Delmar Learning.
3. *Electricity for Refrigeration, Heating and Air Conditioning* (2006). Gene Smith. Thomson Delmar Learning.
4. *Refrigeration Equipment* (1998). A.C. Bryant. Elsevier Science & Technology.
5. *Industrial Refrigeration Handbook* (1998). Wilbert Stoecker. McGraw-Hill.
- 6.\* *Practical Problems in Mathematics for Heating and Cooling Technicians, 3<sup>rd</sup> Edition* (1998). Russell DeVore. Thomson Delmar Learning.
- 7.\* *User's Manual for ANSI/ASHRAE Standard 15-2001, Safety Standard for Refrigeration Systems* (2003). Donald Fenton & William Richards. ASHRAE
8. TPC Training Series – SchoolCraft
  - 102\* Reading Schematics and Blueprints
  - 109.1\* Industrial Safety and Health
  - 110\* Troubleshooting
  - 201\* Basic Electricity and Electronics
  - 210\* Electrical Troubleshooting
  - 301\* Basic Mechanics
  - 461 Ammonia Refrigeration Basics
  - 462 Positive-Displacement Compressors
  - 463 Evaporators, Condensers and Controls
  - 464 Purging, Piping and Safety
9. University of Wisconsin-Madison Refrigeration Series
10. IIAR Andy Ammonia Series

\* Sources jointly published with RETA and available for purchase from RETA