

KACC-0248 EPA 608 Refrigerant Handling Blueprint

Author

[Don Crawshaw](#), Salt Lake Community College

Competency and Learning Objectives

1. Explain core procedures and regulations for EPA 608 refrigerant handling.
 - Explain the effects of ozone depletion.
 - Describe the impact of the Clean Air Act, the Montreal Protocol, and EPA section 608 regulations.
 - Explain the procedures used with substitute refrigerants and oils.
 - Explain refrigerant and refrigeration characteristics and properties.
 - Define the 3Rs [recover, recycle, reclaim] and recovery procedures.
 - Explain the process of evacuation for system dehydration.
 - Explain refrigerant handling safety guidelines.
 - Explain refrigerant shipping guidelines.
2. Explain EPA 608 handling procedures for servicing small appliances (Type I).
 - Explain specificity items needed for Type I.
 - Describe recovery equipment requirements.
 - Identify leak repair requirements for Type I.
 - Explain recovery requirement levels and techniques for Type I.
 - Explain refrigerant handling safety guidelines for Core and Type I.
3. Explain EPA 608 handling procedures for high and very high-pressure appliances (Type II).
 - Define leak detection for Type II.
 - Identify leak repair requirements for Type II.
 - Explain recovery requirement levels and techniques for Type II.
 - Review refrigeration cycle for Type II.
 - Explain refrigerant handling safety guidelines for Type II.

4. Explain EPA 608 handling procedures for low pressure appliances (Type III).
 - Define leak detection for Type III.
 - Identify leak repair requirements for Type III.
 - Explain recovery requirement levels and techniques for Type III.
 - Explain recharging techniques for Type III.
 - Review refrigeration cycle for Type III.
 - Explain refrigerant handling safety guidelines for Type III.

Orientation to Course

Course Description

This course will prepare you to take the required EPA Section 608 Certification. Section 608 of the US Federal Clean Air Act requires all persons who work with regulated refrigerants on stationary equipment to be certified. This certification is need to work with refrigerants anywhere in the US.

Instructions for the EPA 608 Refrigerant Handling Certification

You will take one national exam made up of four smaller exams; one core exam, and three equipment type exams. If you pass the core exam and any of the equipment type exams, you will be nationally certified in those types. If you pass all four national exams, you will have a national universal certification. These exams are proctored online exams that will cost \$25.00 for the whole exam (all 4 smaller exams). This can be paid for with a credit card. **Note that taking the actual exam is not required as part of this course. This course is designed to help prepare you for the exam.**

Competencies

Upon completion of the course, you will be rated as MC (Mastered Competency) or NM (Not-Mastered Competency) based on your demonstrated ability of the course's established competencies. You will:

- Explain core procedures and regulations for EPA 608 refrigerant handling.
- Explain EPA 608 handling procedures for servicing small appliances (type I).
- Explain EPA 608 handling procedures for high and very high pressure appliances (type II).
- Explain EPA 608 handling procedures for low pressure appliances (type III).

Textbook *(Note: Books and materials required for this course are listed below. Instructor uses instructional materials from this publisher, including presentations, videos, and other learning materials.)*

EPA Certification Exam Preparatory Manual from Esco institute: ISBN 1-930044-01-1

You can use either a hard copy or digital copy whichever you choose.

Assessment

You will be given a written progress exam to see if you are on track in progressing toward the required competencies at the end of each module. You must pass these progress exams with a score of at least 80% before you can move on to the next module.

At the end of the course you will again be given a written exam that you must pass with at least a score of 80% before you will be rated with an MC as your grade for the course.

How to Pass the EPA 608 Certification Exams

The key to passing the exams is first really studying the **EPA Certification Exam Preparatory Manual** and second taking as many practice exams as you can before you take the real exam. You will find links to some practice exams throughout the modules of this course, but I would strongly recommend that you search the internet for more practice exams when you have time. To begin with let's start by watching this introduction YouTube video:

[How to pass the EPA 608 Certification Test Type 1 2 3 Universal for HVAC](#)

Again, the written exams that you will be taking in this course are designed to help you prepare to take the actual EPA 608 Exam. You do not need to take or pass the actual exam to be graded out with an MC.

Course Navigation *(Note: Instructions for learning management system)*

In the left navigation bar is a Course Tools menu. It provides information about what tools you need for the course, and how to navigate in Canvas. Start the course with the first module below. You can also click on the **Modules** link in the left navigation bar to navigate through the course.

Modules

Module 1: Core Exam Preparation

Core Exam Preparation Overview

The core exam covers the basic refrigeration process, rules and regulations, and refrigerant handling procedures. You must pass this exam to receive any of the equipment type certifications.

When you have completed this module, you will know how to:

- Explain the effects of ozone depletion.
- Describe the impact of the Clean Air Act, the Montreal Protocol, and EPA section 608 regulations.
- Explain the procedures used with substitute refrigerants and oils.
- Explain refrigerant and refrigeration characteristics and properties.
- Define the 3Rs [recover, recycle, reclaim] and recovery procedures.

- Explain the process of evacuation for system dehydration.
- Explain refrigerant handling safety guidelines.
- Explain refrigerant shipping guidelines.

Core Exam Preparation Assignments

Prepare for this exam by completing the following.

1. Read and study the **Introduction** and **Core** sections in the preparatory manual.
2. This presentation EPA Certification Core along with these sections. *(Note: This item is a presentation that the instructor has permission to stream on the learning management system.)*
3. Review these YouTube videos:

Watch the videos below by clicking on the play button. Click the Minimize Video link when you are done watching the videos. Return to the assignments page when you have watched all of them.

- [Core Lecture](#)
 - [Intro – Heat Transfer](#)
 - [Intro – Refrigeration Cycle](#)
 - [How to recover refrigerant from a cylinder that has been mixed with air](#)
 - [Gauges](#)
 - [Using the P/T Chart to find the refrigerant type in a cylinder](#)
 - [Refrigerant Recovery Cylinders](#)
 - [Disposable Refrigerant Cylinders](#)
4. Use these [flashcards](#) to prepare for the practice exams.
 5. The key to passing your EPA 608 Exams is to do as many practice exams you can. The links below will take you to some online EPA 608 Core Practice Exams. The first two links will take you to practice exams that let you pick what exam you want to take. For this module just work on the exams for the Core. The last link is only for the Core exam.
 - [Free EPA Practice Exams](#)
 - [EPA 608 Free Practice Exam](#)
 - [EPA Core Practice Exam](#)
 6. When you feel ready, let you instructor know that you want to take the Core Progress Written Exam.

Core Progress Written Exam

This exam will help you and your instructor see how you are progressing in the course. This exam covers the Introduction and Core sections of the EPA Certification Exam Preparatory Manual. This exam must be taken in the classroom. You must get a score of 80% or better to move on to the next assignment.

Module 2: Type I Exam Preparation

Type I Exam Preparation Overview

Technicians who maintain, service, or repair small appliances must be certified as Type I technicians. This module helps you prepare for the Type I exam.

When you have completed this module, you will know how to:

- Explain specificity items needed for Type I.
- Describe recovery equipment requirements.
- Identify leak repair requirements for Type I.
- Explain recovery requirement levels and techniques for Type I.
- Explain refrigerant handling safety guidelines for Core and Type I.

Type I Exam Assignments

Prepare for this exam by completing the following.

1. Read and study the **Type I** sections in the preparatory manual.
2. This presentation *EPA Certification Type I goes along with these sections. **Note: Instructor received permission to use this presentation in the learning management system.*
3. Review these YouTube videos:
Watch the videos below by clicking on the play button. Click the Minimize Video link when you are done watching the videos. Return to the assignment page when you have watched all of them.
[Type 1 Lecture](#)
[Adding Trace Gas R-22 & Nitrogen to a HVAC System for Leak Testing](#)
[Refrigerant Recovery Types – System Dependent & Self Contained Refrigerant Charging Cylinder](#)
[How to install a piercing valve on an appliance](#)
4. Use these [flashcards](#) to prepare for the practice exams.
5. The key to passing your EPA 608 Exams is to do as many practice exams you can. The links below will take you to some online EPA 608 Type I Practice Exams. The first two links will take you to practice exams that let you pick what exam you want to take. For this module just work on the exams for the Type I. The last link is only for the Type I exam.
[Free EPA Practice Exams](#)
[HVAC Certification Practice Tests](#)
[EPA Type I: Practice Test](#)
6. When you feel ready, let you instructor know that you want to take the Type I Progress Written Exam.

Type I Progress Written Exam

This exam will help you and your instructor see how you are progressing in the course. This exam covers the Type I sections of the EPA Certification Exam Preparatory Manual. This exam must be taken in the classroom. You must get a score of 80% or better to move on to the next assignment.

Module 3: Type II Exam Preparation

Type II Exam Preparation Overview

Technicians who maintain, service, repair, or dispose of high or very high-pressure appliances, except small appliances, must be certified as Type II technicians. This module helps you prepare for the Type II exam.

When you have completed this module, you will know how to:

- Define leak detection for Type II.
- Identify leak repair requirements for Type II.
- Explain recovery requirement levels and techniques for Type II.
- Review refrigeration cycle for Type II.
- Explain refrigerant handling safety guidelines for Type II.

Type II Exam Assignments

Prepare for this exam by completing the following.

1. Read and study the **Type II** sections in the preparatory manual.
2. This presentation *EPA Certification Type II goes along with these sections. **Note: Instructor received permission to use this presentation in the learning management system.*
3. Review these YouTube videos
[Type 2 Lecture](#)
[Adding Refrigerant to a System \(Liquid & Vapor Charging R-22\)](#)
[Type 1 2 3 Refrigerant](#)
4. Use these [flashcards](#) to prepare for the practice exams. The links below will take you to some online EPA 608 Type II Practice Exams.
5. The key to passing your EPA 608 Exams is to do as many practice exams you can. The first two links will take you to practice exams that let you pick what exam you want to take. For this module just work on the exams for the Type II. The last link is only for the Type II exam.
[Free EPA Practice Exams](#)
[EPA 608 Free Practice Test 1](#)
[EPA Type II: Practice Exam](#)
6. When you feel ready, let you instructor know that you want to take the Type II Progress Written Exam.

Type II Progress Written Exam

This exam will help you and your instructor see how you are progressing in the course. This exam covers the Type II sections of the EPA Certification Exam Preparatory Manual. This exam must be taken in the classroom. You must get a score of 80% or better to move on to the next assignment.

Module 4: Type III Exam Preparation

Type III Exam Preparation Overview

Technicians who maintain, service, repair, or dispose of low pressure appliances must be certified as Type III technicians. This module helps you prepare for the Type III exam.

When you have completed this module, you will know how to:

- Define leak detection for Type III.
- Identify leak repair requirements for Type III.
- Explain recovery requirement levels and techniques for Type III.
- Explain recharging techniques for Type III.
- Review refrigeration cycle for Type III.
- Explain refrigerant handling safety guidelines for Type III.

Type III Exam Assignments

Prepare for this exam completing the following.

1. Read and study the **Type III** sections in the preparatory manual.
2. This presentation *EPA Certification Type III goes along with these sections. *Note: *Instructor received permission to use this presentation in the learning management system.*
3. Review these YouTube videos:
[Type 3 Lecture](#)
[Type 3 Low Pressure Refrigerant Hazard](#)
4. Use these [flashcards](#) to prepare for the practice exams.
5. The key to passing your EPA 608 Exams is to do as many practice exams you can. The links below will take you to some online EPA 608 Type III Practice Exams. The first two links will take you to practice exams that let you pick what exam you want to take. For this module just work on the exams for the Type III. The last link is only for the Type III exam.
[Free EPA Practice Exams](#)
[EPA 608 Free Practice Test 1](#)
[EPA Type III: Practice Test](#)
6. When you feel ready let your instructor know that you want to take the Type III Progress Written Exam.

Type III Progress Written Exam

This exam will help you and your instructor see how you are progressing in the course. This exam covers the Type III sections of the EPA Certification Exam Preparatory Manual. This exam must be taken in the classroom. You must get a score of 80% or better to move on to the next assignment.

Final Competency Exams

Final Competency Exams Overview

By now you should have studied the EPA Certification Exam Preparatory Manual and have taken many practice exams in each of the four areas of the EPA 608 exam.

Below is a link to a final practice exam that I would like you to take before you take the final written competency exam:

[Cfc Practice Exam \(100 Questions\)](#)

When you are ready move on to the final competency exam to complete this course. You will need to get a score of 80% or higher to complete this course.

Final Competency Exam Form A *(There is a Form B in case the student does not pass Form A)*

This assessment will measure your knowledge of the core principles of refrigerant handling in preparation for the 608 Universal EPA Certification exam. The assessment consists of 25 multiple-choice questions. To pass this assessment, you will need a score of 80% (20 out of 25 points).

If you do not pass on the first attempt, you will have the opportunity to meet with your instructor, study and practice the content further, and retake an alternate version of the assessment.

Type I Final Competency Exam Form A *(There is a Form B in case the student does not pass Form A)*

This assessment will measure your knowledge of the Type I refrigerant handling (small appliances) in preparation for the 608 Universal EPA Certification exam. The assessment consists of 25 multiple-choice questions. To pass this assessment, you will need a score of 80% (20 out of 25 points).

If you do not pass on the first attempt, you will have the opportunity to meet with your instructor, study and practice the content further, and retake an alternate version of the assessment.

Type II Final Competency Exam Form A *(There is a Form B in case the student does not pass Form A)*

This assessment will measure your knowledge of the Type II refrigerant handling (high- or very high-pressure appliances) in preparation for the 608 Universal EPA Certification exam. The assessment consists of 25 multiple-choice questions. To pass this assessment, you will need a score of 80% (20 out of 25 points).

If you do not pass on the first attempt, you will have the opportunity to meet with your instructor, study and practice the content further, and retake an alternate version of the assessment.

Type III Final Competency Exam Form A *(There is a Form B in case the student does not pass Form A)*

This assessment will measure your knowledge of the Type III refrigerant handling (low-pressure appliances) in preparation for the 608 Universal EPA Certification exam. The assessment consists of 25 multiple-choice questions. To pass this assessment, you will need a score of 80% (20 out of 25 points).

If you do not pass on the first attempt, you will have the opportunity to meet with your instructor, study and practice the content further, and retake an alternate version of the assessment.

EPA 608 Certification Exam

Schedule a time to take the actual EPA 608 Certification Exam with your instructor when you are ready. You will need to bring a credit card and the cost of the exam is \$25.00.

Remember that the actual **EPA 608 Certification Exam** does not need to be taken or passed to complete this course, just the **Final Competency Exam**.