

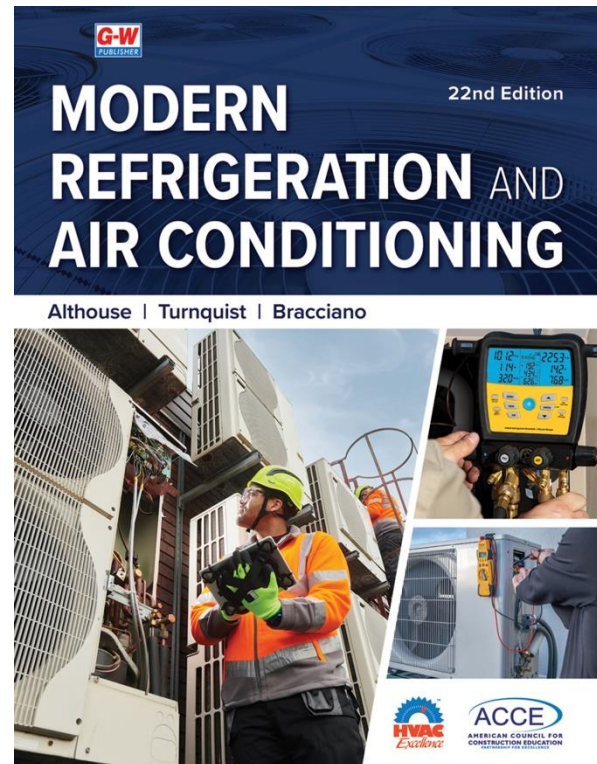


*Correlation of*  
**Modern Refrigeration and Air Conditioning**, by Althouse, Turnquist, Bracciano  
 (Goodheart-Willcox Publisher ©2025)  
 to  
**HVAC Excellence Competencies Task List: Duct and Envelope**

The following chart correlates the *Modern Refrigeration and Air Conditioning* textbook (©2025) to an area of the HVAC Excellence Competencies Task List.

The chart lists individual competency and task standards, and the corresponding chapter numbers from *Modern Refrigeration and Air Conditioning*.

For more information on HVAC Excellence and related certifications, please visit:  
[www.hvacexcellence.org](http://www.hvacexcellence.org).



| Competency / Task   | Textbook Chapters   |
|---|---------------------|
| <b>Students must have knowledge of and be able to demonstrate proficiency in:</b>             |                     |
| Awareness that carbon monoxide is deadly  | Chapter 33          |
| Define duct leakage testing, conditioned space and unconditioned space                        | Chapter 31          |
| Describing the method of measuring static pressure  | Chapters 30, 33, 34 |
| Develop an awareness of energy conservation opportunities for both new and existing buildings | Chapter 40          |
| Explain the benefits of leakage testing and remediation                                       | Chapter 31          |
| Gain knowledge of test pressure measurements  | Chapters 30, 33, 34 |
| Identifying the components of a blower door   | Chapter 31          |

**Correlation of *Modern Refrigeration and Air Conditioning, 22e* to  
HVAC Excellence Competencies Task List: Duct and Envelope—page 2**

| Competency / Task  | Textbook Chapters   |
|--|---------------------|
| Knowing the recommended action levels of carbon monoxide                                 | Chapters 29, 33     |
| Recognize common sources of carbon monoxide  | Chapters 29, 33     |
| Understand carbon monoxide test instruments  | Chapters 29, 33     |
| Understand how to perform a blower door test   | Chapter 31          |
| Understand the basics of building science  | Chapter 40          |
| Understand the health effects of carbon monoxide exposure                                | Chapters 29, 33     |
| Understand the principle and procedures of duct leakage testing                          | Chapter 31          |
| Understand the purpose and use of the blower door  | Chapter 31          |
| Understanding the dangers of carbon monoxide   | Chapters 29, 33     |
| <b>Students must be able to demonstrate proficiency in:</b>                              |                     |
| Blower door testing procedure  | Chapter 31          |
| Calculating conditioned volume of a building   | Chapter 31          |
| Calculating the ACH <sub>50</sub>  | Chapter 31          |
| Calculating the duct leakage rates   | Chapter 31          |
| Carbon monoxide testing procedures   | Chapters 29, 33     |
| Comparing and contrasting the difference between a leaky structure and a tight structure | Chapter 31          |
| Demonstrating the procedure for finding cfm using an anemometer                          | Chapters 28, 31     |
| Describing “R” values and application of various duct insulation materials               | Chapter 32          |
| Determine maximum allowable testing static pressure                                      | Chapters 30, 33, 34 |
| Determining the air leakage rate of a building using a blower door                       | Chapter 31          |
| Measuring static pressure  | Chapters 4, 24, 30  |
| Performing total duct leakage testing  | Chapter 31          |
| Safe entry protocol for carbon monoxide  | Chapters 2, 29      |
| Setting up the components of a blower door   | Chapter 31          |
| <b>Students must be able to demonstrate knowledge in:</b>                                |                     |
| Ladder and fall protection safety procedures   | Chapters 2          |
| Lock Out and Tag Out procedures  | Chapters 2          |
| Proper PPE requirements  | Chapters 2          |

**Correlation of *Modern Refrigeration and Air Conditioning, 22e* to  
HVAC Excellence Competencies Task List: Duct and Envelope—page 3**

| <b>Competency / Task</b>       | <b>Textbook Chapters</b> |
|--------------------------------|--------------------------|
| Emergency first aid procedures | Chapter 2                |
| Proper use of hand tools       | Chapters 2, 4            |