

# C-39R (Residential) and L-39 (Commercial) Air Conditioning and Refrigeration

Exam Number: 030621  
Effective Date: 08/18/08

## License Information

**Scope** – Installation, alteration, and repair of refrigeration and evaporative cooling systems.

Installation, alteration and repair of heating systems of “wet,” “dry” or radiant type. “Wet” systems include steam or hot water boilers and coils or baseboard converters and are limited to 30 PSIG operating pressure and 220°F for hot water and 15 PSIG operating pressure for steam. Dry systems include gas fired furnaces and space heaters.

Installation, alteration, and repair of ventilation systems includes duct work, air filtering devices, water treatment devices, pneumatic or electrical controls and control piping. Thermal and acoustical insulation, vibration isolation materials and devices, liquid fuel piping and tanks, water and gas piping from service connection to equipment it serves. Testing and balancing of refrigerant, cooling and heating circuits and air handling systems.

If necessary, a new circuit may be added to the existing service panel or sub-panel. Excluded is the installation of a new service panel or sub-panel.

The trade test is considered equivalent for these classifications and upon passing the CBME and trade exam, either license classification may be applied for without further testing.

## Examination Outline

### Closed Book

**80 Questions - Three-hour time limit**

**70% Correct required to pass**

Exam Topic	%
Refrigeration	15
Steam, Hot, Chilled and Condensing Water	15
Controls	15
Warm-Air Heating	10
Ventilation	10
Test, Balance and Inspect	10
Air Conditioning	10
Steam/Hot Water Boilers	5
Evaporative Coolers	5
Sizing and Estimating	5

## References

The following references were used to create exam questions but **are not allowed** in the testing center.

1. *International Fuel Gas Code*, 2006, International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478-5795, [www.iccsafe.org](http://www.iccsafe.org).
2. *International Mechanical Code*, 2006, International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478-5795, [www.iccsafe.org](http://www.iccsafe.org).
3. *HVAC Systems: Testing, Adjusting and Balancing*, Third Edition, 2002, Sheet Metal and Air Conditioning Contractors National Association (SMACNA), 4201 Lafayette Center Drive, Chantilly, VA 20151, [www.smacna.org](http://www.smacna.org).
4. *Modern Refrigeration and Air Conditioning*, Eighteenth Edition, 2004, Goodheart-Willcox Company, Inc., 18604 West Creek Drive, Tinley Park, IL 60477-6243, [www.g-w.com](http://www.g-w.com).
5. *TRANE Air Conditioning Manual*, Revised Edition, 1996, TRANE Company, c/o Inland Marketing Services, 3030 Airport Road, La Crosse, WI 54603, [www.trane.com/bookstore](http://www.trane.com/bookstore).

*For information on how to obtain exam references, please call toll-free 877.624.2562.*

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