

CONSORTIUM FOR ENERGY EFFICIENCY, INC.

Expanding Markets for Super-Efficient Technologiessm

One State Street Suite 1400 Boston, MA 02109-3507 Phone: 617-589-3949 Fax: 617-589-3948 Web: www.CEEforMT.org Email: CEE@CEEforMT.org

August 18, 2000

FOR IMMEDIATE RELEASE

Contact: **Howard Newman**, Communications Director, 617-589-3949, ext. 209
Rebecca Foster, Program Associate, 617-589-3949, ext. 225

CEE's residential HVAC spec defines "quality installation"

Proper sizing and installation of equipment are critical to achieving peak reduction

The proper selection, sizing, installation and maintenance of residential HVAC systems are major factors in optimizing energy savings.

The Consortium for Energy Efficiency (CEE) has taken a major step forward in advancing the full potential of energy and peak demand savings by developing a specification that addresses the installation and maintenance of residential systems. This specification – entitled *Specification of Energy-Efficient Installation and Maintenance for Residential HVAC Systems* – is currently available on the CEE web site (www.CEEforMT.org).

CEE has been promoting high-efficiency residential HVAC systems since launching a formal initiative in 1994. By working with utilities and other energy organizations, CEE has accelerated the demand, availability and sales of energy-saving HVAC equipment.

Increasing the usage of high-efficiency equipment is not enough, however. CEE's new specification is a compilation of installation practices that focuses on maximizing the efficiency of residential HVAC systems. It is a "user friendly" document, which includes performance specifications, step-by-step procedures, easy-to-understand verification protocols and dozens of illustrations.

WHY THE SPECIFICATION WAS DEVELOPED

- A "quality installation" can reduce energy consumption by as much as 35 percent – and peak demand by as much as 25 percent.
- There was no previous nationwide consensus on what constitutes an energy-efficient installation.
- It provides consistent guidelines that can be incorporated into energy-efficiency programs.

"We have developed a single, clear definition of an energy-efficient quality installation," said CEE Program Manager Denise Rouleau, who coordinated the project. "This is something gas and electric utilities, and energy-efficiency organizations can rally around and promote in their programs."

CEE developed the specification over a two-year period, compiling the best practices of the HVAC industry. Trade associations, HVAC manufacturers and energy-efficiency organizations all provided input during the development process.

Pacific Gas & Electric, Sacramento Municipal Utility District, and the New York State Energy Research and Development Authority (NYSERDA) co-funded development of the specification.

Another application of this specification is the incorporation of energy efficiency into national certification programs for contractors. CEE is continuing discussions with North American Technician Excellence (NATE) to include energy-efficient installation practices in its testing. Should NATE adopt CEE's specification, it would encourage the implementation of "quality installation" practices in the field.

Connecting the duct blower



Connecting the duct blower to a single central return gives an accurate airflow reading as long as the ducts have been sealed to specifications listed in Chapter 5.

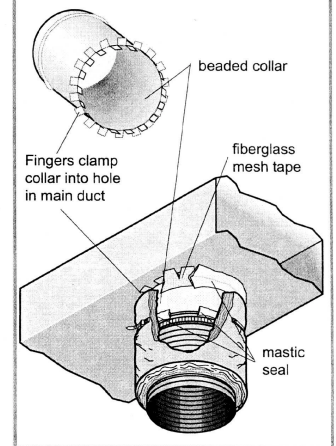
What's included in the CEE HVAC specification?

Specification of Energy-Efficient Installation and Maintenance Practices for Residential HVAC Systems is a comprehensive guide to the best practices in sizing, installing and maintaining an HVAC system.

It includes:

- More than 30 photos and diagrams
- Step-by-step instructions
- Glossary of terms
- Tests and verification methods
- How to avoid common mistakes
- Reference tables

Joining flex-duct with metal fittings



Covered equipment:

**AIR CONDITIONERS
GAS FURNACES**

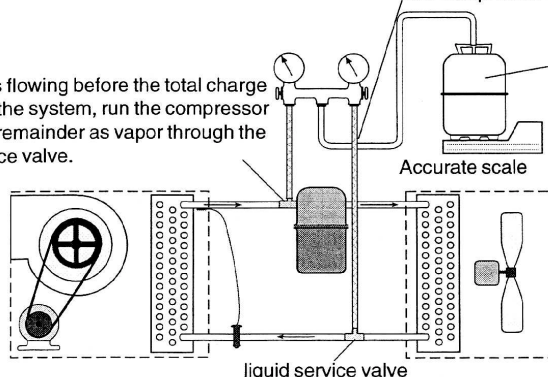
**HEAT PUMPS
THERMOSTATS**

DUCTS and AIR HANDLERS

Weighing in a refrigerant charge

If liquid stops flowing before the total charge has entered the system, run the compressor and add the remainder as vapor through the suction service valve.

First, charge with liquid refrigerant through the liquid service valve with the compressor off.



Disposable container must be inverted for liquid charging. DOT-approved container remains upright for liquid charging because it has a liquid valve.

Weighing in refrigerant corrects for low charge as determined by superheat or subcooling tests. If refrigerant must be withdrawn, a recovery/recycle unit must be used. For heat pumps or air conditioners charged during outdoor temperatures less than 70°F, the system must be evacuated in an EPA-approved manner and recharged by weight.

Proper installation of central air conditioning reduces peak demand

According to recent research, most residential central air conditioning systems are not installed properly. This not only increases energy use but also reduces comfort and contributes to peak demand.

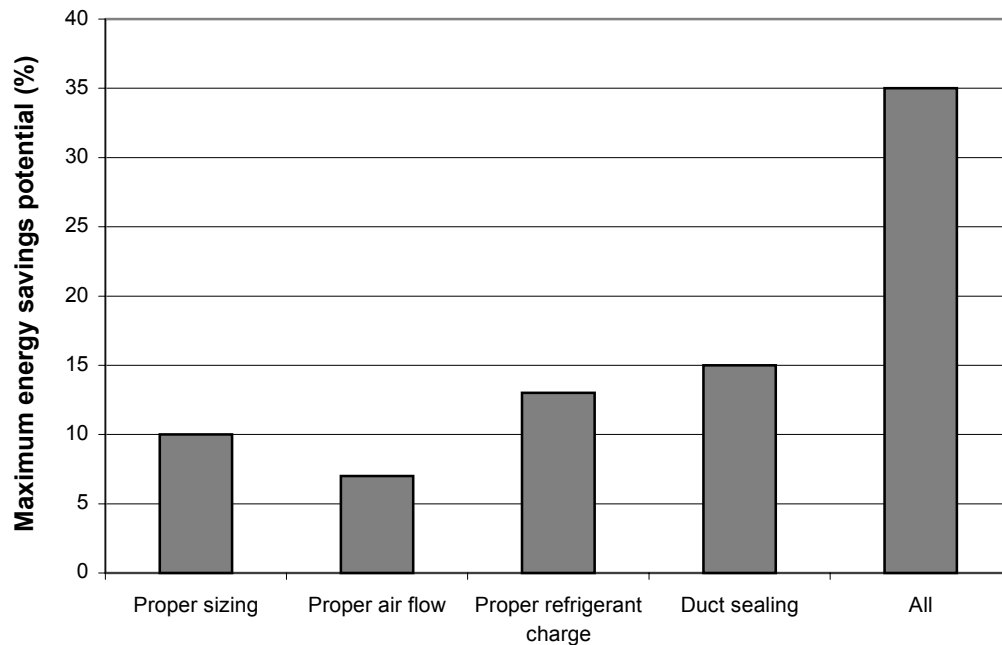
Below is a breakdown of major problem areas and the frequency with which they occur:

- Oversizing 47 percent
- Inadequate airflow 70 percent
- Improper refrigerant charge 44 percent

Correcting these problems could reduce air conditioning peak demand by 14 percent in existing homes and 25 percent in new construction.

Proper installation and maintenance could also reduce air conditioning energy bills by an average of 24 percent in existing homes and 35 percent in new construction.

Potential energy savings through energy-efficient HVAC installation



Source: *National Energy Savings Potential From Addressing Residential HVAC Installation Problems (1999)* by Chris Neme, Vermont Energy Investment Corporation; John Proctor, Proctor Engineering Group; and Steve Nadel, American Council for an Energy-Efficient Economy.

Specification of Energy-Efficient Installation and Maintenance for Residential HVAC Systems

Here's some reaction from around the country ...

"If contractors use the specification for installing duct systems, the consumer will quickly benefit by having a system that is not only energy efficient but quieter and longer lasting."

Joel Kinsch
Director of Technical Development
North American Technician Excellence

"Technical advancements in HVAC have been tremendous in recent years. It is now time to turn to quality installation to harvest the remaining energy savings. CEE's Residential HVAC Specification will serve as the centerpiece for programs and protocols to yield huge efficiency savings with added comfort and safety benefits."

Charles Segerstrom
Supervisor, Energy Training Center
Pacific Gas & Electric

"CEE's efforts have resulted in reaching industry consensus on the best practices of energy-efficient residential HVAC installation. This specification will help transform the HVAC market into one that promotes not only efficient equipment but also emphasizes a quality installation."

Craig Sherman
Demand-Side Specialist
Sacramento Municipal Utility District