

HVAC QI – Where Are We Today?

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Presentation Overview

Topic	Time (min)
Available Resources: Standards, etc	~ 5
Implementation Efforts	~ 4
ACCA On-going Direction	~ 3
Looking Forward (Today / Tomorrow)	~ 2

QI Development

QI Standard created through a collaborative process involving multiple stakeholders:

- Program administrators
- OEMs
- contractors
- efficiency advocates
- EPA
- HVAC certification / accreditation entities



ANSI recognized March 2007

ANSI / ACCA 5 QI – 2007 *HVAC Quality Installation Specification*



Quality Installations Elements

Design Aspects

- Load Calc
- Equip Capacity Selection
- Matched Systems

Installation Aspects

- Airflow across Coil
- Refrigerant Charge
- Electrical Requirements
- System Controls
- On-rate (fuel-fired)
- Venting

Duct Distribution Aspects

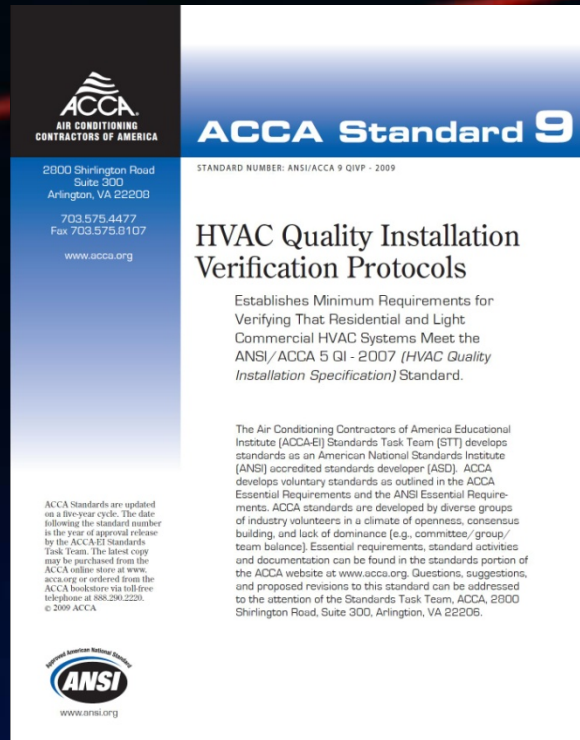
- Duct Leakage
- Airflow Balance

Doc. / Education Aspects

- System Documentation
- Owner Education

***Well recognized practices
that quality contractors embrace
when delivering quality installations***

QIvp Development



The image shows the front cover of the ACCA Standard 9 book. The cover is primarily white with a blue header and footer. The ACCA logo is in the top left, and the ANSI logo is in the bottom left. The title 'ACCA Standard 9' is prominently displayed in the top right. The main title 'HVAC Quality Installation Verification Protocols' is centered. Below the title is a descriptive paragraph. At the bottom, there is a small text block about the standard's update cycle and purchase information.

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ACCA Standard 9

STANDARD NUMBER: ANSI/ACCA 9 QIvp - 2009

HVAC Quality Installation Verification Protocols

Establishes Minimum Requirements for Verifying That Residential and Light Commercial HVAC Systems Meet the ANSI/ACCA 5 QI - 2007 (*HVAC Quality Installation Specification*) Standard.

The Air Conditioning Contractors of America Educational Institute (ACCA-EI) Standards Task Team (STT) develops standards as an American National Standards Institute (ANSI) accredited standards developer (ASD). ACCA develops voluntary standards as outlined in the ACCA Essential Requirements and the ANSI Essential Requirements. ACCA standards are developed by diverse groups of industry volunteers in a climate of openness, consensus building, and lack of dominance (e.g. committee/group/team balance). Essential requirements, standard activities and documentation can be found in the standards portion of the ACCA website at www.acca.org. Questions, suggestions, and proposed revisions to this standard can be addressed to the attention of the Standards Task Team, ACCA, 2800 Shirlington Road, Suite 300, Arlington, VA 22206.

ACCA Standards are updated on a five-year cycle. The date following the standard number is the year of approval release by the ACCA-EI Standards Task Team. The latest copy may be purchased from the ACCA online store at www.acca.org or ordered from the ACCA bookstore via toll-free telephone at 888.290.2220.
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ANSI
American National Standards Institute
www.ansi.org

**QI Verification
Protocols Standard
created through the
same process.**

ANSI recognized February 2009

ANSI / ACCA 9 QIvp – 2009 HVAC QI Verification Protocols

QI Supporting Efforts

Technicians Guide for
Quality Installations

ACCA Standard 5
HVAC Quality Installation Specification
Supports HVAC Quality Installation Specification ANS/ACCA 5 QI-2007

ACCA
Air Conditioning Contractors of America

Released 2008

ACCA Comfortool
Quality Installation
Get what you pay for!

Installation cost is usually the primary factor when home owners are considering replacing their HVAC system. However, there are many factors to consider when going through the decision making process. How can you be sure you will get what you pay for? How can you discern a contractor's skills or evaluate their proposal's promises? How can you assess the value of your new heating and cooling system when the installation cost is but one variable in the total value equation?

Experts from across the HVAC industry identified and refined the basic elements required for a quality HVAC installation. The result was a nationally-recognized industry-approved standard (ANSI/ACCA HVAC Quality Installation Specification) which documents these industry requirements. Below is an abbreviated tool to help you evaluate whether your contractors will comply with the key elements in the QI standard. The questions are meant to help you by discussing the requirements of the key elements and an explanation of what's in it for you. If you seek value, rate your contractor—before you rate the price. For the complete checklist visit www.acca.org/qi/checklist (under development)

QUALITY INSTALLATION CHECKLIST (ABBREVIATED)		Contractor's Score (Yes = 1 & No = 0)		
QI Elements Questions	How to Get What You Pay For	C1	C2	C3
Did the contractor design the heating / cooling system specifically for your home and did they review it with you?	In order to install the right size unit, contractors need to calculate the home's heating and cooling requirements. This is based on a variety of factors (e.g., the size of the home, type of windows, the insulation amounts, etc.). This information leads to proper equipment selection and duct system information. Your new system could solve problems with hot or cold rooms, or humidity control, or dust and allergens. (Give two points for a room-by-room load calculation.)			
Did the contractor review the equipment installation procedures with you? Does the contractor have an installation checklist for testing the new equipment?	Selecting a high efficiency unit is smart. Hiring a contractor who will install the unit so it performs at that high level of efficiency is very smart. It takes great skill and a little extra time to test and ensure it was done right. Post installation measurements are the key factors to guarding your health and safety, and ensuring your energy savings. Have your new system tested to ensure it performs as promised.			
Did the contractor review with you the condition of your duct system? Did the contractor offer a plan to solve identified problems?	Leaky ducts can cause health problems and waste energy that the new high efficiency HVAC system promise. Also if the ducts are too small they will cause the HVAC system to use more energy while delivering less comfort. Ducts that are too small may also lead to early equipment failure.			
Upon job completion, will the contractor sit down and give you all the information you need?	You should receive the equipment's operators manual(s) and be shown how to do a few simple things like operate the thermostat or change the air filter. You should receive the installing contractor's and the manufacturer's warranty. You should also receive a copy of the checklist they used to test, measure, and ensure the system is working as designed.			
What is the skill level of the installing technician's?	Contractors who employ NATE™ certified technicians and installers are providing you with the highest level of nationally recognized talent.			
After interviewing the contractors, compare their scores, then their prices. Contractor's Score:				
		Contractor's Price:		

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Your Logo Here

ACCA
Air Conditioning Contractors of America

Released 2007

Bob's House
Understanding the Residential HVAC Design Process

ACCA
Air Conditioning Contractors of America

Released 2007

Other Supporting Efforts ... Quality Maintenance (QM)

- **Residential HVAC Maintenance Standard**

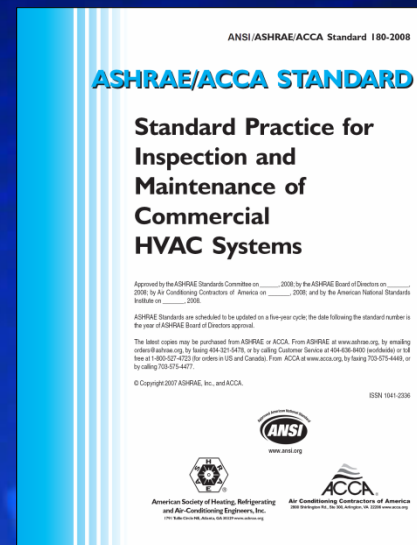
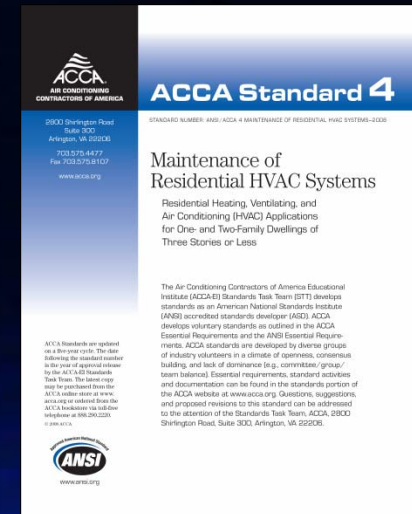
- Participants responsibilities
- Minimum inspection requirements
- Recommended corrective actions

ANSI recognized Dec 2007

- **Commercial HVAC Maintenance Standard**

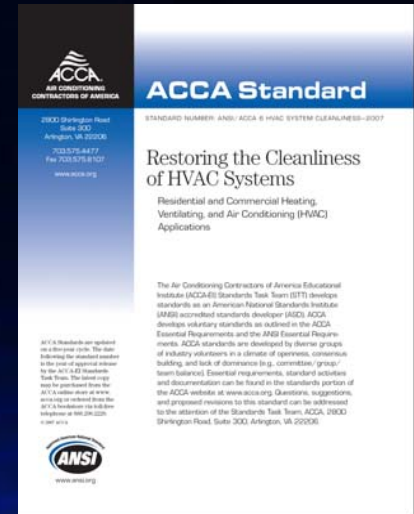
- Similar information
- Schedule for tasks

ANSI recognized July 2008



Other Supporting Efforts ... Quality Restoration (QR)

- **Restoring the Cleanliness of HVAC Systems**
 - Participants responsibilities
 - Minimum inspection requirements
 - Recommended corrective actions
- ANSI recognized April 2007



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US EPA ENERGY STAR® Efforts

Existing Homes

In 2008, launched a new, voluntary, ENERGY STAR *Residential Quality Installation* program.

New Homes

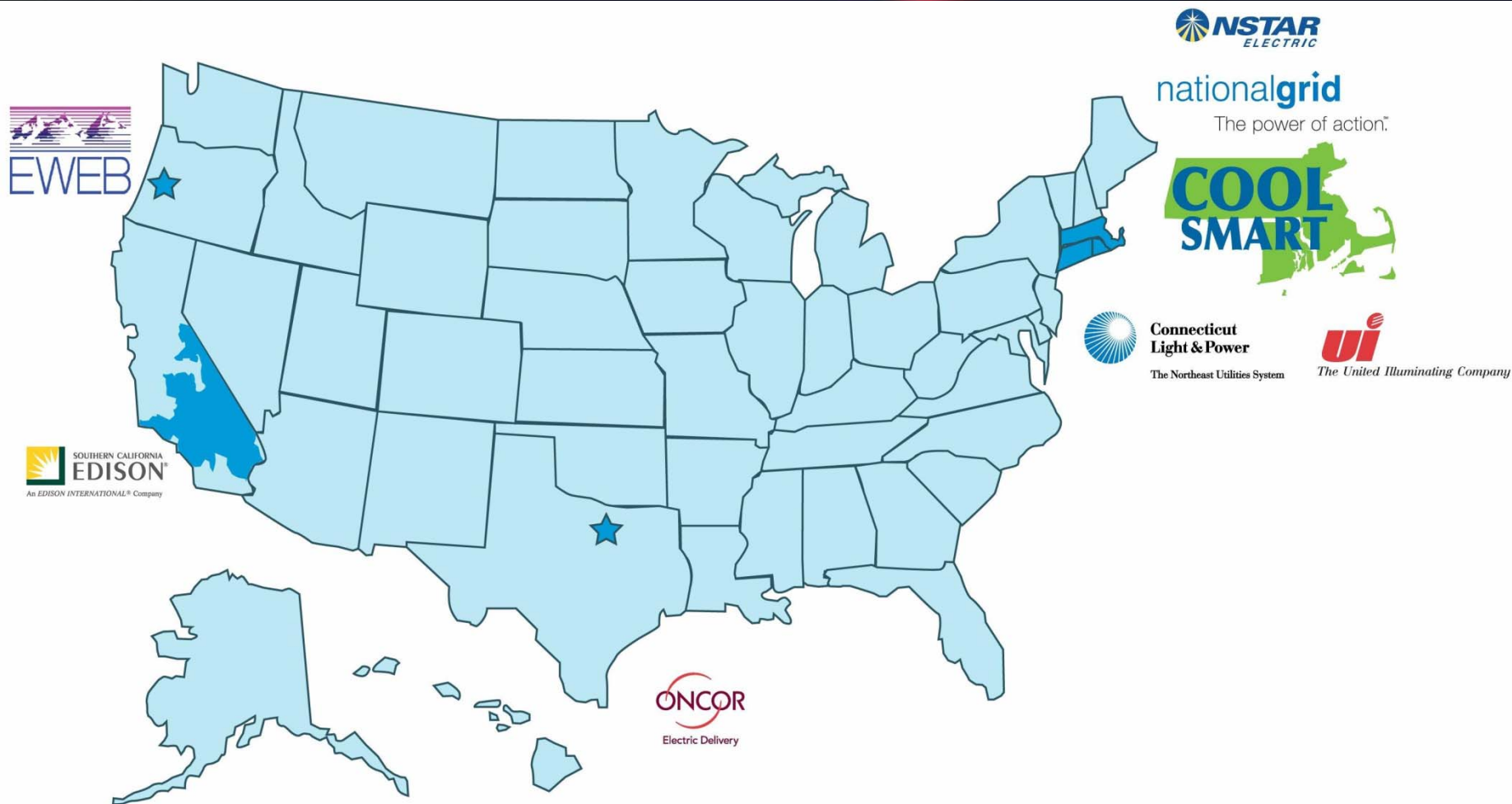
Aligning ENERGY STAR *New Homes Spec* with QI requirements (2011 HVAC Checklist)

Next Steps (EPA)

- Working with stakeholders to develop QI sales training
- Developing verification inspection forms based on ACCA QIvp Standard
- Developing tools, consumer messages and materials to support program sponsors and participating contractors



Current ES QI Utility Partners



Contact: Ted Leopkey, ENERGY STAR HVAC QI, National Program Manager
(leopkey.ted@epa.gov, 202.343.9659)

Growing Sector Support

Utilities

Various adoptions of QI / QM and their elements

States

Energy efficiency efforts, stimulus activities

OEMs and Distributors

Elements detailed as requirements for decades

Contractors

Differentiator, value-adder, 'the right thing'

Efficiency Advocates

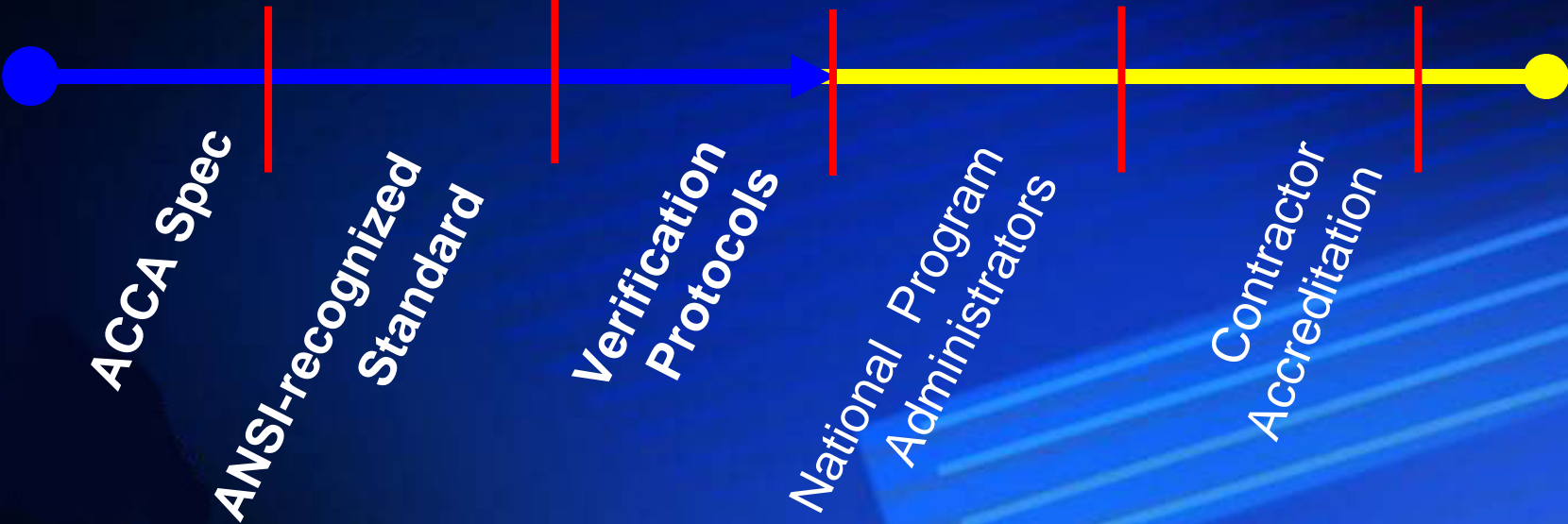
QI is the *compelling story* for upgrading field-installed equipment

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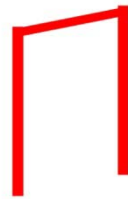
QI / QM / QR "Re-establishing the Bar"

Supporting documents

ANSI Standards

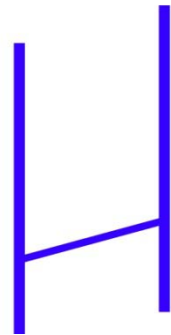


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Raising
the

Bar !



New Technology Impacts

Geographical- or policy-focused

- Smart grid applications
- Regional standards / optimizations

Equipment-focused

- Multiple- and variable-speed equipment
- Inverter drives
- Variable refrigerant flow

*QI and QM
becomes even
more important!*

Questions

????

Answers