



Air-Conditioning, Heating,  
and Refrigeration Institute

# **Global Harmonization of HVACR Standards and Performance Certification**

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## What is AHRI?

- National trade association representing manufacturers of more than 90% of North American produced central air-conditioning, heating, and commercial refrigeration equipment.
- A major voice for the HVACR industry offering its members a forum to solve common challenges and a variety of services and benefits.
- ARI merged with the Gas Appliance Manufacturers Association (GAMA) in 2008 to form the Air-Conditioning, Heating, and Refrigeration Institute (AHRI).



# AHRI Represents:

- **27** billion dollar HVACR industry
- **300+** member companies
- **39** different product sections

## AHRI Provides:

- A powerful voice in government
- Established industry standards
- Continued performance assurance through third-party certification



# What does AHRI do?

- Global and Domestic Standards Development and Harmonization
- Performance Certification
- Advocacy – US and Global
- Supporting Functions
  - Industry statistics
  - Communications
  - Education/training
  - Research and Technology



# Global and Domestic Standards Development and Harmonization

- First standard written in 1953
- ANSI accredited standards developer since 1975
- Portfolio of nearly 90 standards and guidelines
  - Numerous recognized by DOE as national test procedures
  - Close working relationship and MOU with ASHRAE
- Standards harmonization
  - ISO/IEC
  - Regional
    - ISHRAE/RAMA
    - CRAA/ASERCOM
- Other standards of interest
  - Seismic
  - Wind
  - Acoustic
  - Safety

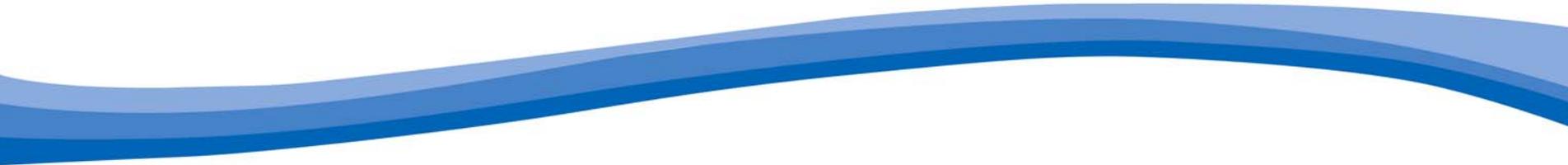


# Harmonization of Standards with Canada

AHRI works closely with the Canadian Standards Association (CSA).

CSA and AHRI worked together in revising AHRI Standard 310/380 *Packaged Terminal Air Conditioners and Heat Pumps*.

Revised standard establishes a single set of requirements for the testing and rating of cooling and heating capacities.



# Harmonization of Standards with Mexico

Agreement in 2006 for AHRI and the Asociación de Normalización y Certificación (ANCE) to work together on HVACR industry standards.

The Memorandum of Understanding Agreement recognizes shared interests in advancing the harmonization of AHRI and Mexican HVACR standards .



# Development of ISO standards

In the 1980s, AHRI began working with the International Organization for Standardization (ISO).

AHRI is Secretariat of Subcommittees 3, 6, and 7 under Technical Committee 86.

The first two standards AHRI helped develop were:

- ISO 5151, *Non-ducted air conditioners and heat pumps - testing and rating for performance*, published in 1994.
- ISO 13253, *Ducted air conditioners and heat pumps - testing and rating for performance*, published in 1995.

# Development of ISO standards

Organizations outside the US resisted a seasonal energy efficiency methodology.

ISO standards were written to incorporate Energy Efficiency Ratios (EER) and Coefficient of Performance (COP).

US federal regulations mandated a seasonal energy efficiency descriptor, or SEER.

AHRI has adopted ISO testing and ratings standard ISO 13256 Parts 1 and 2 as ANSI/AHRI/ASHRAE/ISO.

# Development of IEC standards

The International Electrotechnical Commission (IEC) specializes in standards for electrical, electronic and related technologies.

AHRI's Laboratory Liaison Committee (LLC) works closely with the IEC to promote harmonization efforts.

The LLC is developing Tri-National standards with the help of Canada's CSA and Mexico's ANCE.

US moving towards the IEC standards for electrical safety.

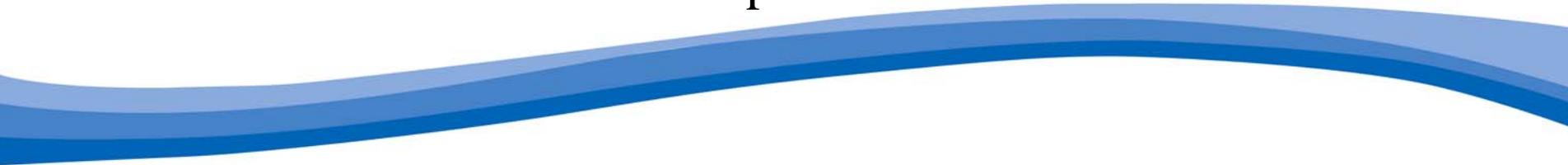
Assumed secretariat of IEC/TC72 TAG in February 2010.

# Harmonization of Standards with India

AHRI agreed to share HVACR equipment and performance rating standards with the Indian Society of Heating, Refrigeration and Air-Conditioning Engineers (ISHRAE).

Agreement was extended in February 2010 to include the Refrigeration and Air-conditioning Manufacturers Association (RAMA) in India.

This shares AHRI's standards and lets ISHRAE and RAMA distribute them to India's developers.



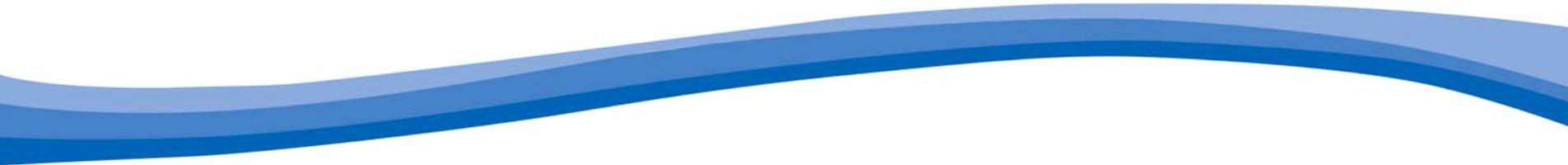
# Harmonization of Standards with China

Difficult to amend established Chinese standards.

AHRI members are embedded into Chinese National committees to assist standards harmonization.

AHRI works with the CRAA and other standards developers such as ASERCOM to develop new regionally harmonized standards.

# AHRI's Performance Certification Program

- Performance certification programs
  - Use recognized industry test standards
  - Verify manufacturer's performance ratings through extensive and continuous testing
  - Open to all manufacturers, foreign/domestic
  - Open to AHRI members and non-members
  - Industry directed; not government mandated
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# AHRI's Performance Certification Program

- 36 Certification programs
- More than 300 participants
- More than 2,000 tests per year
- Nearly \$10 million budget
- 9 directories
- Specified around the world



# Why AHRI Certification?

- Gateway to the North American Market
- Facilitate compliance with:
  - Federal and state efficiency regulations
  - Utility rebates
  - Energy Star
- Accepted by the Natural Resources Canada (NRCan)

# Why AHRI Certification?

- Globally recognized and specified
- Over 60 international participants representing 19 countries

- Saudi Arabia
- Turkey
- Italy
- Netherlands
- Canada
- China
- Malaysia
- Korea
- Mexico
- France
- UAE
- Egypt
- Jordan
- Germany
- India
- Brazil
- Japan
- Australia
- Sweden



# AHRI/CRAA Certification Agreement

AHRI signed agreement with CRAA as exclusive certification agent in PRC in April 2008

- Phase I
  - Training
  - Document translation
  - Communication and promotion
- Phase II
  - Regional testing in China
  - Identify qualified laboratory
  - Assessment of laboratory qualifications
    - Mandatory ISO 17025 accreditation
    - Dual testing (round robin or alternate testing)

# Standards & Certification in the EU

EU created the European Committee for Standardization (CEN), an organization similar to ISO.

Oversees the development of European Standards called ENs.

CEN standards make it difficult to promote ISO work in the EU.

# Standards & Certification in the EU

EUROVENT implemented a certification program that certifies performance ratings according to European and international standards.

The EUROVENT program was designed to be modeled after AHRI's certification program.

# Transition from EER to SEER Standards

The Japan Refrigeration and Air-Conditioning Industry Association (JRA) Standards 4046 and 4048 adopt same seasonal methodology used in AHRI 210/240.

Korea changed to seasonal performance factor based on elements of the Japanese Standard and AHRI 210/240.

In Europe, stakeholders have expressed interest in the performance rating seasonal approach.

# Additional Harmonization Efforts

AHRI's ISO work has evolved to include both unilateral and bilateral harmonization approaches.

AHRI has signed memoranda of understandings (MOU) agreements with China, India, Korea, Russia, and the Gulf States.

Product sections are now encouraged to incorporate rating conditions and other conditions to make them usable worldwide.

# Conclusions

AHRI and its members are committed to the continued global acceptance of its standards.

AHRI will continue to implement memoranda of understanding with its partner organizations around the world.