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ASHRAE Standard 189.1-2010

What is Standard 189.1?

- ANSI standard being developed in model code language (mandatory, enforceable language)
- Provides minimum requirements for high-performance, green buildings
- Applies to all buildings except low-rise residential buildings (same as ASHRAE/IESNA Std 90.1)
- Not a design guide, not a rating system

Standard Project Committee 189.1

- Sponsor and co-sponsors
 - ASHRAE - American Society of Heating, Refrigerating and Air Conditioning Engineers
 - USGBC – U.S. Green Building Council
 - IES - Illuminating Engineering Society
- Project committee
 - 37 total members
 - Diverse backgrounds
- ANSI Consensus process

Scope of Standard 189.1

- Applies to ...
 - new buildings and their systems
 - new portions of buildings and their systems
 - new systems and equipment in existing buildings

Goals for Standard 189.1

- Establish mandatory criteria in all topic areas
 - One “challenge” is existing green building rating systems contain few mandatory provisions
- Provide simple compliance options
- Complement green building rating programs
 - Standard is not intended to compete with green building rating programs

Development of Standard 189.1

2006

Preliminary meeting (Jun)

2007

1st public review (May-Jul)

2008

2nd public review (Feb)

Committee reconstituted (Nov)

2009

3rd public review (May-Jun)

4th public review of ISCs (Sep-Oct)

Publication approval (Dec)

2010

Publication (Jan)

Transition to SSPC (June)



2007

2008

2009

2010

2011

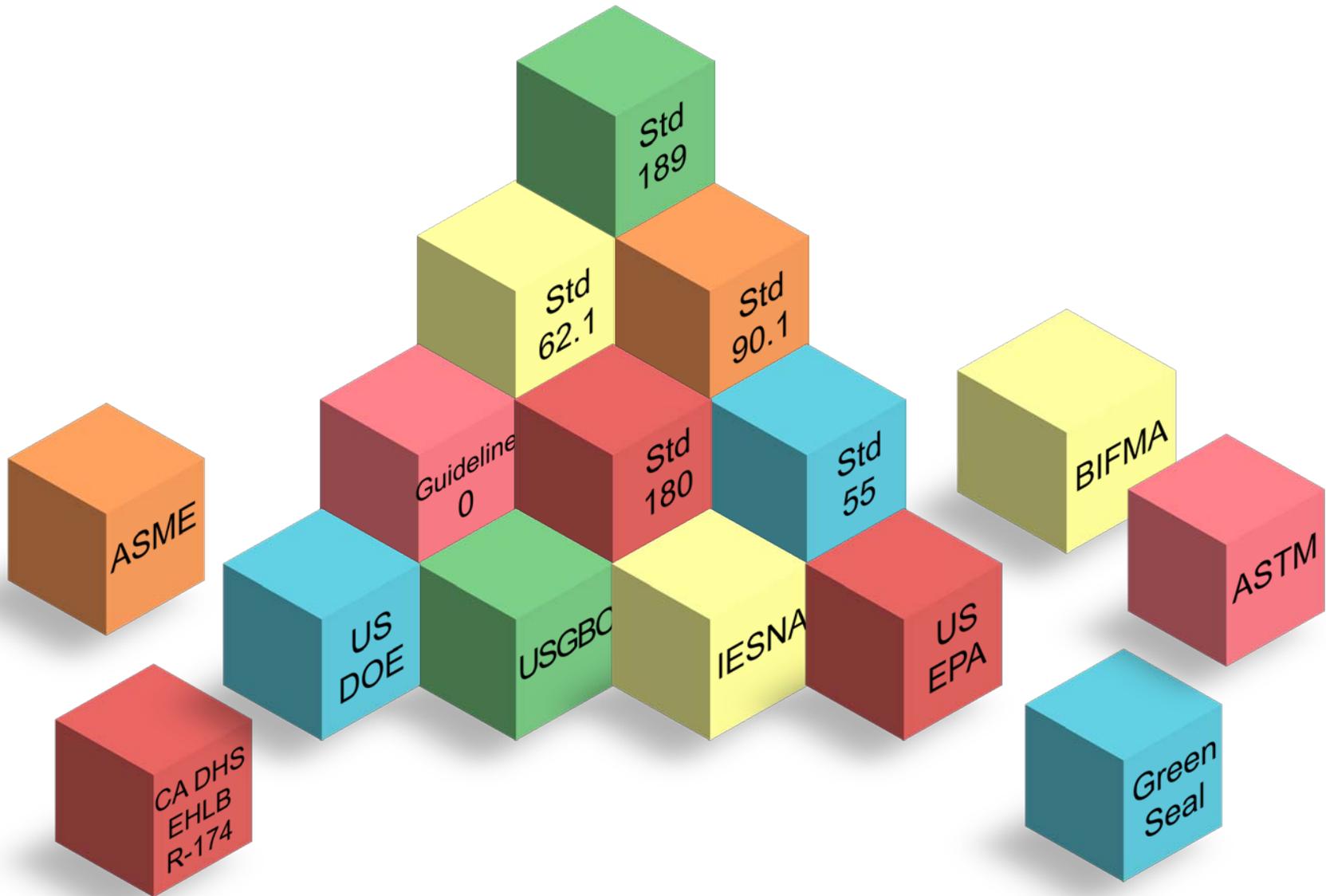
International Code Council



International Green Construction Code

Standard 189.1 = Jurisdictional Compliance Option

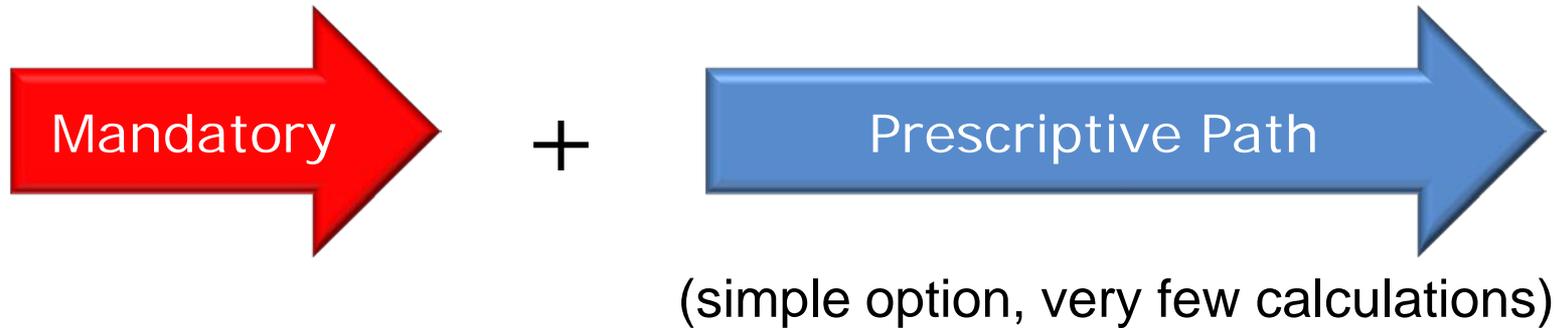
Standard 189.1 Building Blocks



Standard 189.1 Chapter Structure

- x.1: Scope
- x.2: Compliance
- x.3: Mandatory
(required for all projects)
- x.4: Prescriptive Option
(simple option, very few calculations)
- x.5: Performance Option
(more options, but more effort)

Compliance Paths



Standard 189.1 Topic Areas

SS Sustainable Sites

WE Water Use Efficiency

EE Energy Efficiency

IEQ Indoor Environmental Quality

MR Building's Impact on the Atmosphere, Materials & Resources

CO Construction and Operations Plans

Sustainable Sites Highlights

1. Site Selection
2. Reduce heat island effect
3. Reduce light pollution



SS

WE

EE

IEQ

MR

CO

Water Use Efficiency Highlights



- Site Water Use
 - Bio-diverse plantings, hydrozoning, & smart irrigation controllers
- Building Water Use
 - Plumbing fixtures & fittings, appliances, HVAC systems & equipment, generally 40% lower than U.S. EPA Act 1992
 - Cooling tower maximum cycles of concentration
- Water Measurement for building and subsystems

SS

WE

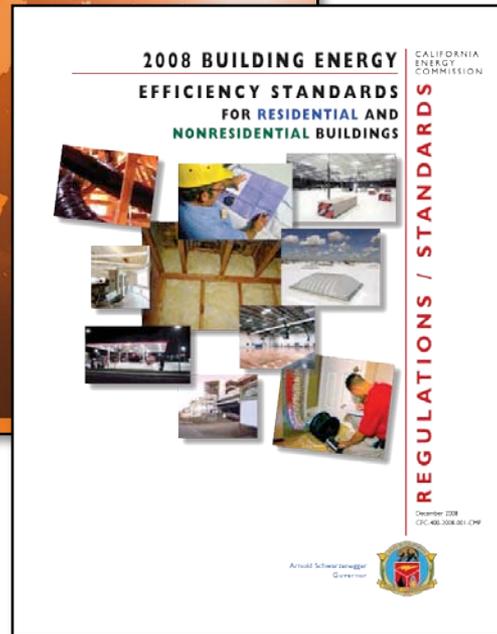
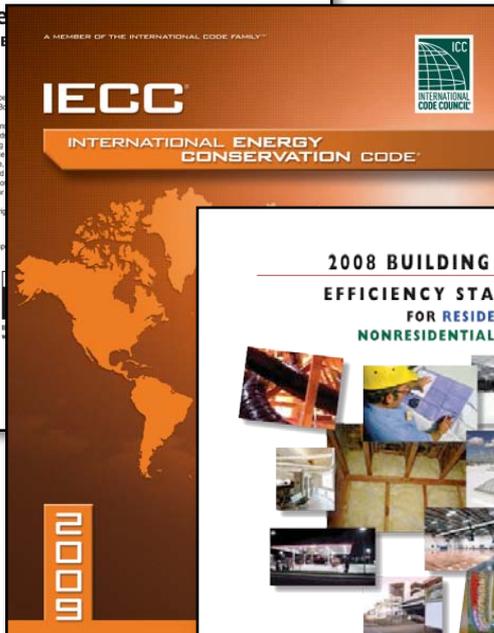
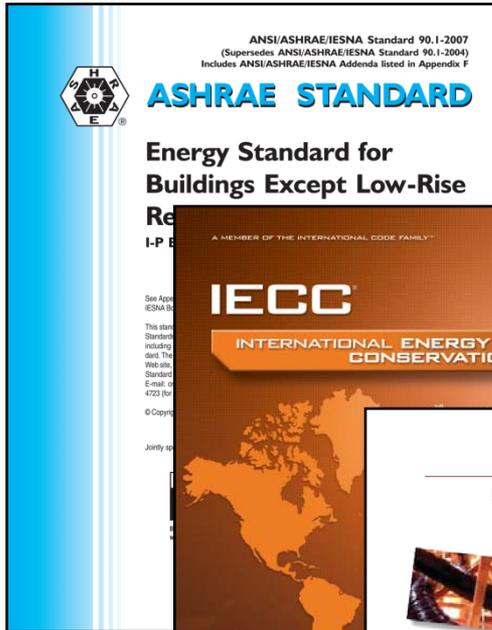
EE

IEQ

MR

CO

Building Energy Codes



Energy Efficiency Highlights

- Includes plug/process loads
- Electric peak load reduction
- More energy efficient than Standard 90.1-2007
- Renewable energy provisions
- Energy measurement for verification

Energy Efficiency Renewable Prescriptive Requirement

- On-site renewable energy systems
 - Annual energy production equivalent of 6 KBtu/ft² of conditioned space
 - Exception for areas with incident solar radiation less than 4 kWh/m²-day and purchase of green power of 75 kWh/ft²-yr for a period not to exceed ten years



Indoor Environmental Quality Highlights



- Indoor Air Quality
 - Ventilation rates per ASHRAE Standard 62.1
 - Outdoor air flow rate monitoring of minimum outside air
 - MERV 8 filter (MERV 13 in PM_{2.5} non-attainment areas)
 - No smoking inside building
 - Source contaminant control
- Daylighting
- Acoustical Control

SS

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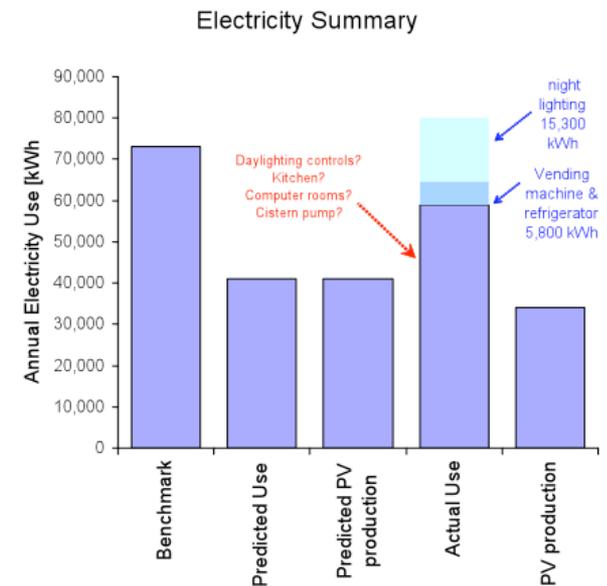
The Building's Impact on the Atmosphere Highlights

- Construction waste management
- Reduced Impact Materials
- Wood products
- Refrigerants
- Storage and collection of recyclables and discarded goods



Construction and Operation Highlights

- Acceptance Testing / Commissioning
- IAQ Construction Management Plan
- Plans for Operation
 - High-performance building operation
 - Maintenance
 - Service life
 - Transportation management



SS

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EE

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The Role of ASHRAE in Public Policy

ASHRAE's Mission:

To advance the arts and sciences of heating, ventilating, air conditioning and refrigerating to serve humanity and promote a sustainable world.

- ASHRAE knowledge base is important to society
- Technical, unbiased resource to decision makers
- Policy decisions are made at international, national, state/province and local levels
- Others continue to address issues; ASHRAE must be engaged to help society get it right

What is Your Best Path Forward?

- Begin to understand the impact of these new requirements
- Identify what requisite skills and knowledge are needed once this standard and green codes are implemented
- Share your knowledge and experience

Further Information

- Information on Standard 189.1:
www.ashrae.org/greenstandard
- ASHRAE Training on Standard 189.1
- User Manual to assist in the understanding in how to apply the standard

Questions

