Setting the Standard for Building Performance

Presented by:
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Building Performance Institute, Inc.
RESNET Conference
San Diego, CA
February 25, 2003

Standards


WOODFRAME ENVELOPE
BEST PRACTICE GUIDE
BUILDING TECHNOLOGY
AMERICAN NATIONAL STANDARD
HOUSEHOLD GAS APPLIANCE
HUD REHABILITATION ENERGY GUIDELINES
NATIONAL FUEL GAS CODE
1999 Edition
Training Manual
nfpa JOURNAL
ENERGY STAR Homes
Technical Standards
STANDARDIZATION News
BPI
BUILDING PERFORMANCE INSTITUTE, INC.
TECHNICAL STANDARDS
FOR
AIR CONDITIONING & HEAT PUMP SPECIALISTS
TABLE OF CONTENTS:
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LIDAY

Who Needs Standards?

- Practitioners (raters, contractors, builders, architects)
- Authorities (credentialing entities, code officials, program management)
- Policy-Makers (government bodies, trade associations)
- Consumers (home-owners, residents)

Why Do We Need Standards?

- To ensure consistent delivery of services
- To obtain broad-based acceptance
- To raise the bar
- To improve the quality of services

How much is too much?

- We've got to pause and ask ourselves: How much clean air do we need?
  – Lee Iacocca

Consistency

- Consistency is the essence of standardization
- What is required to ensure consistent results?
  - Clearly defined standards
  - Clearly stated standards
  - Validation and verification

Stakeholders

- Stakeholder involvement ensures broad-based acceptance
- Who are the stake-holders?
- Challenge:
  - building consensus without diluting the end product

Raising the Bar

Raising the Bar

Why did the Fosbury Flop work?

- Innovation
- Risk
- Technique
- Persistence
- Scientific Basis

Quality Assurance

- Standards without enforcement are ineffective
- Verification of properly applied standards is crucial
- An authoritative body is necessary for interpretation

What is a Standard?

- **Technical Specifications**
  - Prescriptive
  - Related to things
- **Performance Standards**
  - Procedural
  - Related to behaviors
- **Policy Standards**
  - Validation
  - Related to verification of performance

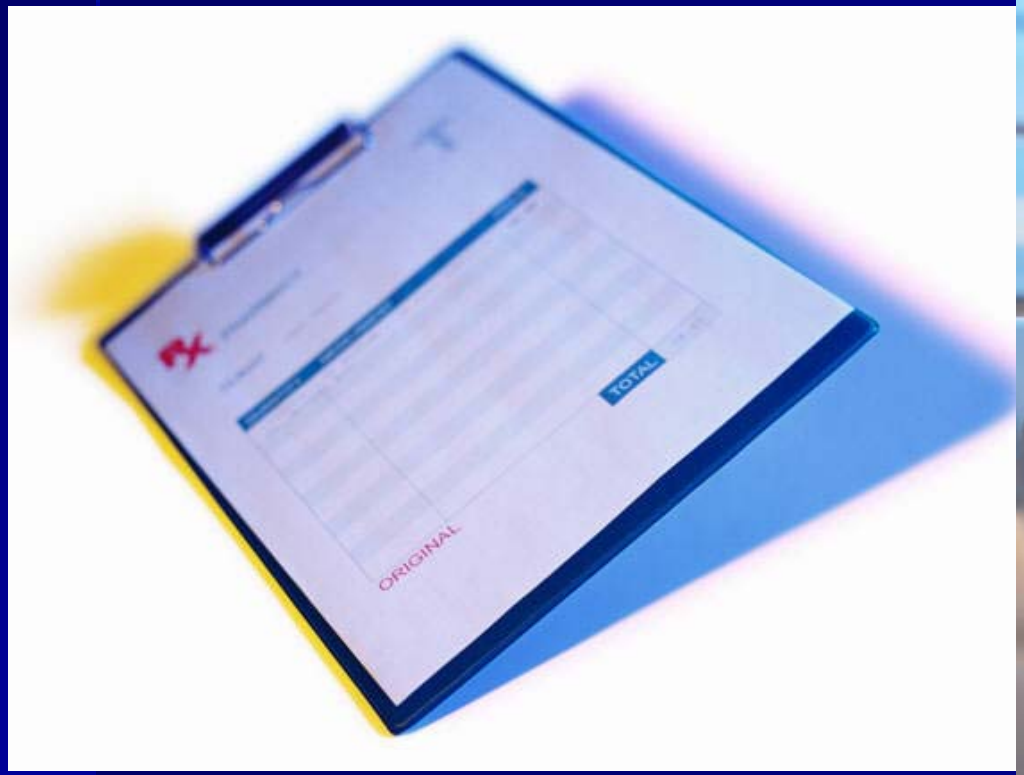
Technical Specifications

- Related to the end product rather than the process
- Quantifiable
- Goal-oriented

Technical Specifications

- ENERGY STAR® labeled products must be 30% more energy-efficient than the baseline for that product

Prescriptive Standards



Prescriptive Standards Characteristics

- Measurable
- Verifiable
- Repeatable
- Often Nominal

Food Defect Action Levels

- **PEANUT BUTTER**
  - Insect filth
    Average of 30 or more insect fragments per 100 grams
  - Rodent filth
    Average of 1 or more rodent hairs per 100 grams
  - Grit
    Gritty taste and water insoluble inorganic residue is more than 25 mg per 100 grams

Prescriptive Standards Categories

- Installation Specifications
- Acceptable Limits
- Minimum Measures
- Materials Specifications

Performance Standards

Performance Standards

- **How did adventure racing change the standard for athletic performance?**
  - Forces athletes to diversify their skills
  - Requires a combination of mental strength and physical strength
  - Places a premium on endurance and teamwork

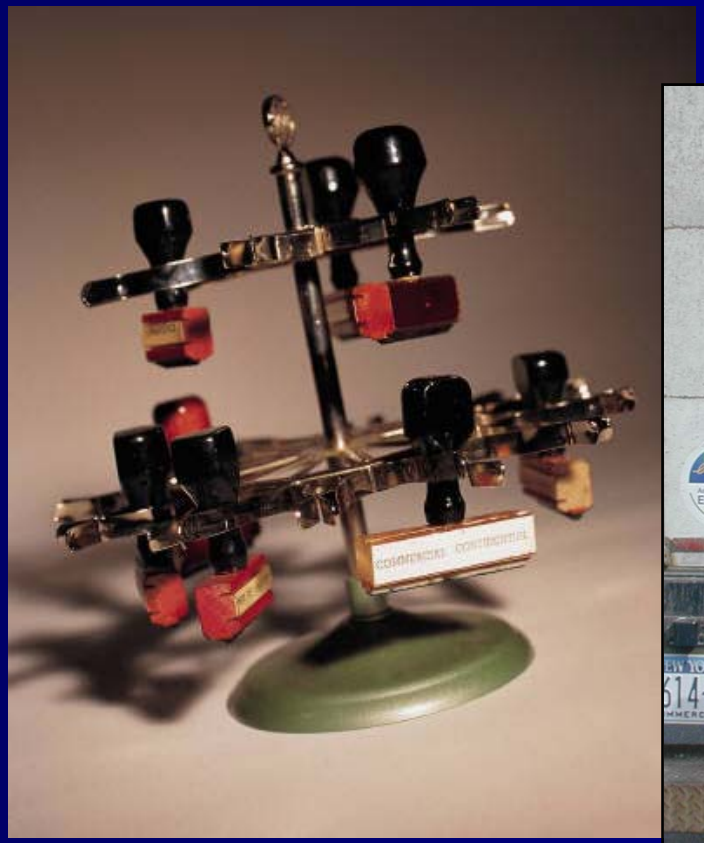
Performance Standards Characteristics

- Procedural
- Practical
- Applied
- Directly related to best practices

Performance Standards Categories

- Tools and Techniques
- Protocols and Procedures
- Diagnostic Applications
- Work Scope Prioritization

Validation Standards



Validation Standards Example

- The final CFM50 measurement must be within +/- 15% of the inspection measurement.

Validation Standards Characteristics

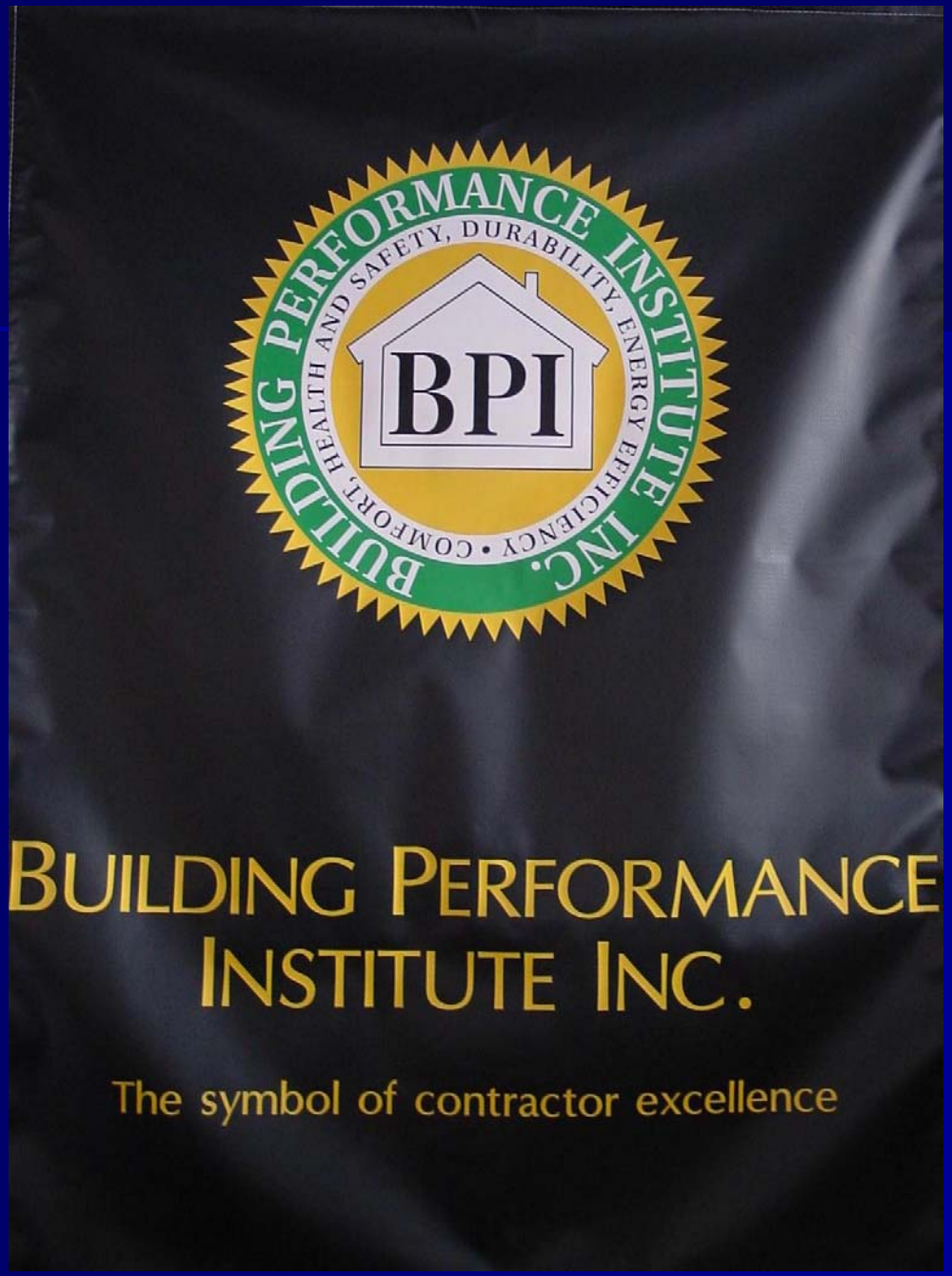
- Quality Assurance Criteria
- Pass/fail Conditions
- Direct correlation to Prescriptive and Performance Standards

Validation Standards Categories

- Inspection Process
- Compliance Tools
- Feedback/Recertification Process
- De-listing Criteria

Applications

- What happens when we have standards without skills verification?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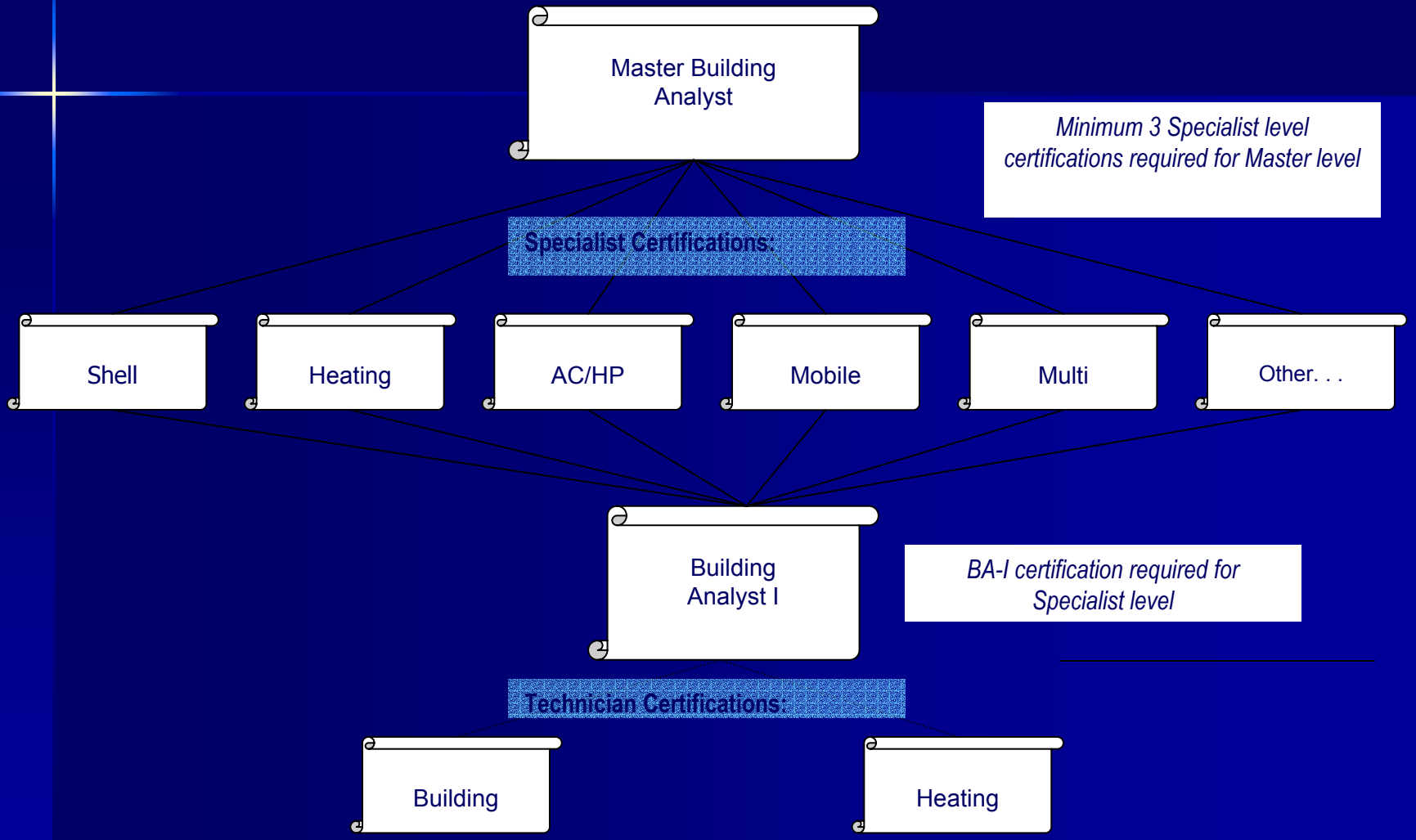
BPI Process

- **Certification**
  - Knowledge-based written exam
  - Performance-based lab/field exam
- **Accreditation**
  - Business level commitment to practice according to BPI performance standards

BPI Job Designations



BPI Process

- **Technical Standards Development**
  - Technical Advisory Council oversight
  - Expert Panel core development
  - Technical Committee review process

Current Projects

- Air Conditioning and Heat Pump Specialist
- Mobile Homes Specialist
- Multi-Family Auditor
- BPI HERS Rater

BPI HERS Rater

- Combines BPI Building Analyst I with traditional HERS Rater
- Voluntary opportunity for Raters to raise the bar

Where Does HERS Fall Short?

- Technical Performance Standards
- Diagnostic Protocols
- Quality Assurance Standards and Procedures
- De-listing Criteria
- Centralized Technical Support

BPI HERS Rater

- **Provides standards and skills verification for**
  - Inspection procedures
  - Performance testing
  - Health and safety

BPI HERS Rater

- **Content will include areas where national HERS standards fall short:**
  - Insulation assessment procedures to determine effective R-value
  - Mechanical ventilation requirements
  - Duct leakage testing specifications
  - Combustion safety testing
  - Inspection process
  - Design requirements (Manual J, Manual D, IBR)

BPI HERS Rater

- **What will BPI provide in exchange for this commitment?**
  - Expert technical support, including access to members of BPI technical committees
  - Assistance in rating decision-making (making defensible trade-offs, selecting upgrade packages)
  - Other possible collateral benefits
    - Guidance for working with builders
    - Homeowners manual

Challenge

- To create a baseline set of standards with enough flexibility to allow for regional and programmatic variations on a national scale.

Partnership Opportunities

- BPI Affiliate Organizations
- BPI Technical Committee
- Training Opportunities
- Compliance Tools

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