



# Manufactured Housing Professional

TESTING KNOWLEDGE LIST



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### **Acknowledgements**

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### **Preface**

This policy and procedures manual was developed under contract for the Building Performance institute, Inc. The manual will be reviewed on a three-year basis and modification may be made at that time or sooner if it is deemed to improve the certification process.

## Table of Contents

1.	Manufactured Housing Professional Testing Knowledge List .....	1
1.1	Building Science.....	1
1.2	Auditing Skills.....	1
1.3	Inspection and Diagnostic Skills.....	1
1.4	Installation Skills.....	2
1.5	Health and Safety.....	3
1.6	Technician.....	3
2.	Standards of Reference .....	3
3.	Contact Information.....	4

# **1. Manufactured Housing Professional Testing Knowledge List**

## **1.1 Building Science**

1. Calculate area
2. Calculate volume
3. Definition of density
4. Calculate insulation bag counts for enclosed cavity installation to proper density
5. Definition of effective R-value
6. Understand effects of wind intrusion related to insulation performance
7. Understand how duct design and performance contributes to pressure imbalances in buildings
8. Identify techniques to relieve room to room pressure imbalances
9. Identify common moisture sources in mobile homes
10. Understand moisture transport mechanisms in buildings

## **1.2 Auditing Skills**

1. Estimate costs of installed measures
2. Estimate labor requirements for installation of measures
3. Predict results of installed measures
4. Prioritize installation of measures unique to mobile homes
5. Evaluate cost-effectiveness of measures
6. Develop a work scope based on audit results
7. Identify typical mobile homes structural systems
8. Identify components of mobile homes structural and envelope systems
9. Identify typical mobile homes mechanical systems (heating, hot water, ventilation)

## **1.3 Inspection and Diagnostic Skills**

1. Identification and diagnosis of moisture issues
2. Inspect and test electrical circuits for proper polarity and GFI
3. Visual inspection procedures for ductwork
4. Pressure pan test
5. Room to room pressure diagnostic test procedures
6. Insulation density inspection/verification
7. Belly inspection procedures
8. Interior inspection procedures
9. Wall cavity inspection procedures
10. Roof cavity inspection procedures
11. Window and door inspections for proper fit, operation, and performance
12. Visual spillage indicators
13. CO testing mobile homes furnaces

14. CO testing mobile homes water heaters
15. CO testing gas/propane cook stoves
16. Mechanical ventilation inspection and diagnostic evaluation

## **1.4 Installation Skills**

1. Crew management: supervision, job assignments, perform work himself
2. Project management
3. Materials inventory management
4. Decision-making for installation techniques, including when barriers arise
5. Specify change orders to work scope, often as the job is in progress
6. Installation progress tracking: bag count, timing, verify integrity of installation
7. Mitigation of moisture problems
8. Duct sealing materials selection
9. Duct sealing techniques
10. Duct sealing procedures and applications
11. Belly patch materials selection
12. Belly patch techniques
13. Belly patch procedures and applications
14. Belly insulation materials selection
15. Belly insulation installation techniques
16. Belly insulation procedures and applications
17. Roof insulation materials selection
18. Roof Insulation installation techniques
19. Roof insulation procedures and applications
20. Roof sealing and weatherproofing materials selection
21. Roof sealing and weatherproofing techniques
22. Roof sealing and weatherproofing procedures and applications
23. Sidewall insulation materials selection
24. Sidewall insulation installation techniques (blown and stuffed)
25. Sidewall insulation installation procedures and applications
26. Storm window installation procedures and applications
27. Air sealing limits/standards
28. Air sealing measure prioritization
29. Mechanical ventilation requirements
30. Room to room pressure balancing techniques
31. Room to room pressure balancing procedures and applications
32. Combustion air requirements
33. Combustion air installation procedures and applications
34. Mechanical closet compartmentalization techniques
35. Mechanical closet compartmentalization procedures and applications
36. Client instruction on use of heat tape to keep pipes from freezing

## 1.5 Health and Safety

1. Visual inspection for health and safety issues in the mobile home
2. Job safety: enforcement of OSHA requirements
3. Personal safety procedures
4. Scaffolding requirements, procedures, and applications
5. Egress requirements for working under mobile homes
6. Use of moisture barriers to cover contaminated areas when working under mobile homes
7. Identification of mobile home water heater fuel switch valve
8. Identification of aluminum wiring
9. Procedures and applications for monitoring ambient CO during testing
10. Application of BPI CO allowable limits and action levels
11. CO detector requirements and applications
12. Restriction on use of woodstoves in mobile homes
13. Procedures and applications for protection from static electricity charges when blowing insulation

## 1.6 Technician

1. Know when to get in touch with specialist
2. Mechanics of installations
3. Understand proper use of materials
4. Identification of problems, moisture, barriers, etc.
5. Physical requirements: climb ladders, crawl under belly, carry 30 #'s, etc.
6. Troubleshoot installation problems/barriers for referral to Specialist
7. Personal safety procedures
8. Basic safety inspection

## 2. Standards of Reference

All BPI exams are based on a mixture of industry practices, axiomatic<sup>1</sup> concepts, and major standards of references. No singular source exists that could touch upon every aspect for what is considered testable. Conversely, there is no limit to the potential useful material found in print and online.

### Manufactured Housing

- [Technical Standards for the Manufactured Housing Professional](#)

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<sup>1</sup> An axiomatic concept is something implicit that requires no proof or explanation (e.g. – the sum of 2 and 2 is 4, or gravity states that if you drop something, it will fall to a lower level.

### **3. Contact Information**

If you have any questions, comments, or concerns regarding the testing knowledge list please contact BPI's Certification Development department at [certdev@bpi.org](mailto:certdev@bpi.org).