



Session 3, Insulation and Air Sealing Part I

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How will the SWS affect:

- SWS Field Guide:
 - Chapter 2. Audits and Inspections
 - Chapter 12. Diagnostic Testing: Building Shell
 - Chapter 3. Weatherization Materials
 - Chapter 4. Attics

Chapter 2. Audits and Inspections

- Language difference
 - In Minnesota ECM has meant:
 - **Electronically Commutated Motor**
 - When the SWS Field Guide says ECM, it means
 - **Energy Conservation Measure**

Chapter 2. Audits and Inspections

- Not directly part of the SWS
- Still closely related to SWS
- Standards for Audit and Inspections in:
 - WA Manual (July 1, 2015)
 - Technical Policy Manual (July 1, 2015)

Chapter 2. Audits and Inspections

- Quality Work Plan (SWS & QCI)
- **SWS:** ensures **quality work** by WAP
- **Home Energy Professional (HEP) Certifications**
 - Quality Control Inspector (QCI), Auditor (EA), Crew Leader(CL), Retrofit Installer(RI)
- **HEP:** ensures WAP roles are filled by **qualified personnel** that results in a
 - quality Wx process
 - quality work

Chapter 2. Audits and Inspections

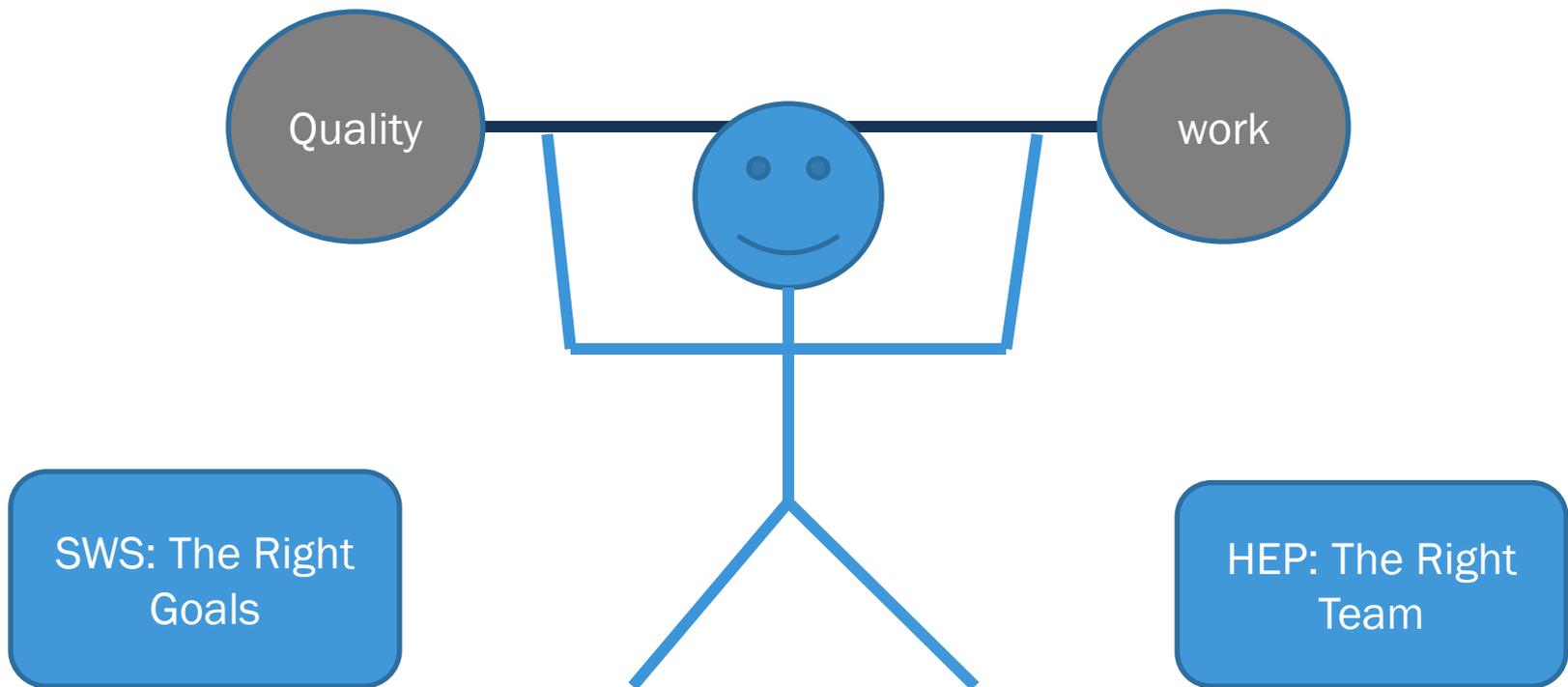


Chapter 2. Audits and Inspections



Chapter 2. Audits and Inspections

- HEPs help ensure work standards are met

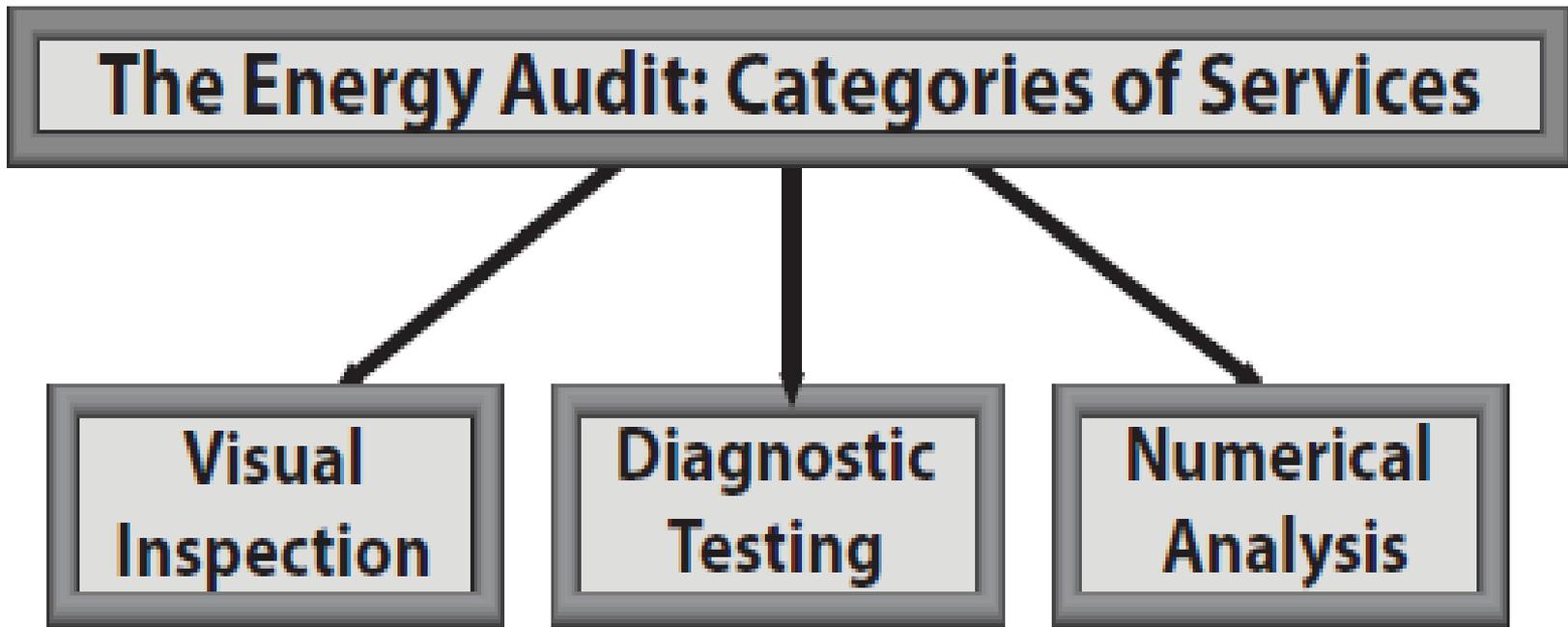


Chapter 2. Audits and Inspections

- Auditors
 - Assess what work needs to be done
 - Documentation
 - “The story of the house” - Rodney
 - Communicate work standards
 - Work orders
 - Notes



Chapter 2. Audits and Inspections

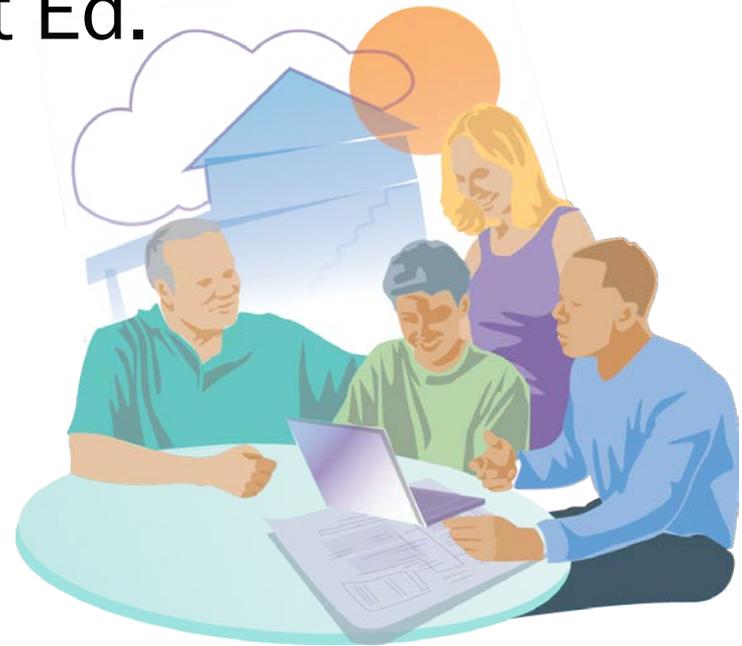


Chapter 2. Audits and Inspections

- Quality Control Inspectors (QCI) assess if
 - the right work was called for
 - if the standard was communicated properly
- Were work standard met by contractors/crews
- The Big Differences with QCI Inspection
 - inspecting the process and the work
 - not just the work
 - Auditing the audit

Chapter 2. Audits and Inspections

- Communication & Client Ed.
 - Introduce
 - Explain Program
 - Listen carefully
 - Ask questions
 - Provide a summary
 - Avoid promises
 - Prepare for additional visits



Chapter 2. Audits and Inspections

- Ethics
- How do poor decisions affect
 - The customer
 - The crews, contractors, and inspectors
 - The agency
 - The program
- We are Responsible for our part
 - Outcomes,
 - was the right work done
 - was the work done right
 - Ethics—especially health and safety
 - Positive Communication

Chapter 12. Diagnostic Testing

- HVAC Testing Found in Chapter 8: HVAC
- Building Shell Testing
 - No additional required building shell tests
 - Some will be done differently. I.e.
 - Zones WRT Outside
 - Less variability from baseline changes
- Required tests will be communicated in policy rollout

Chapter 3 Weatherization Materials

- 10 CFR 440 Appendix A
- MN State Plan and policy further defines. I.e.
 - No FG Batts in foundations
 - No Flex Duct for fans and dryers (except when install demands it).

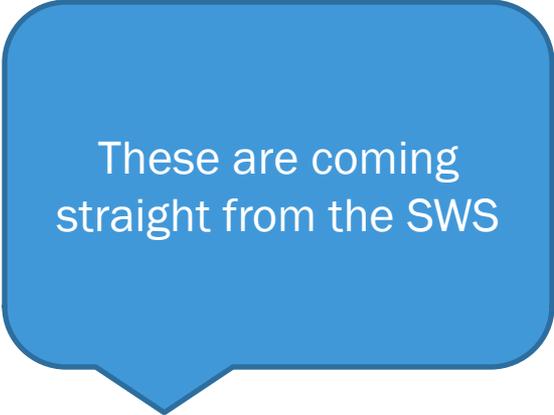
Chapter 3 Weatherization Materials

- How is Air Sealing a durability issue?
- Air Sealing Goals
 - Durability
 - Energy Savings
 - Comfort



Chapter 3 Weatherization Materials

- Indoor Air Quality (IAQ)
- Combustion Safety
 - CAZ
- Fire Safety
 - Air Bypasses can be paths for fire to spread
 - Fire rating of materials is crucial
 - Ignition verses Thermal Barrier
 - Regular Use = Tighter standard
 - Storage verses maintenance in attics and crawlspaces



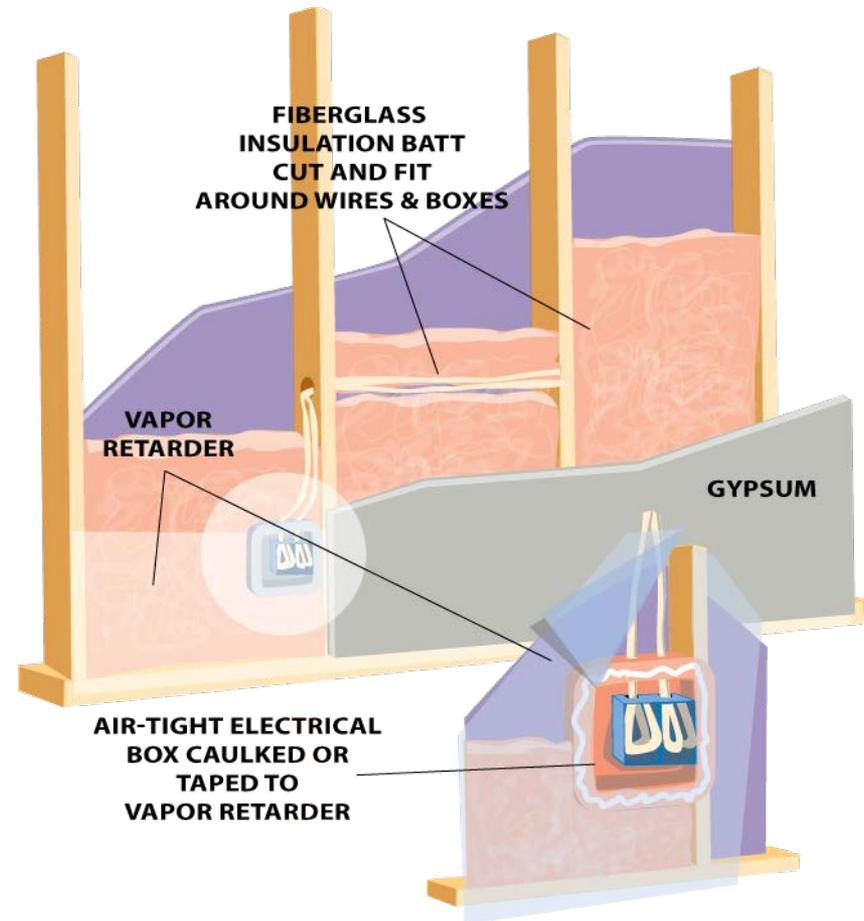
These are coming
straight from the SWS

Chapter 3 Weatherization Materials

- Air Sealing Materials
 - Effectiveness
 - Durability
 - Consider Wind Load
 - Max Span 24”
 - Fire Rating
 - Foam Board: Thermax or equivalent is acceptable
 - Its convenient, but is it the best?

Chapter 3 Weatherization Materials

- Air Sealing Materials
 - Stuffing Materials
 - Backer Rod
 - FG Batts
 - Blown Cellulose/
Fiberglass

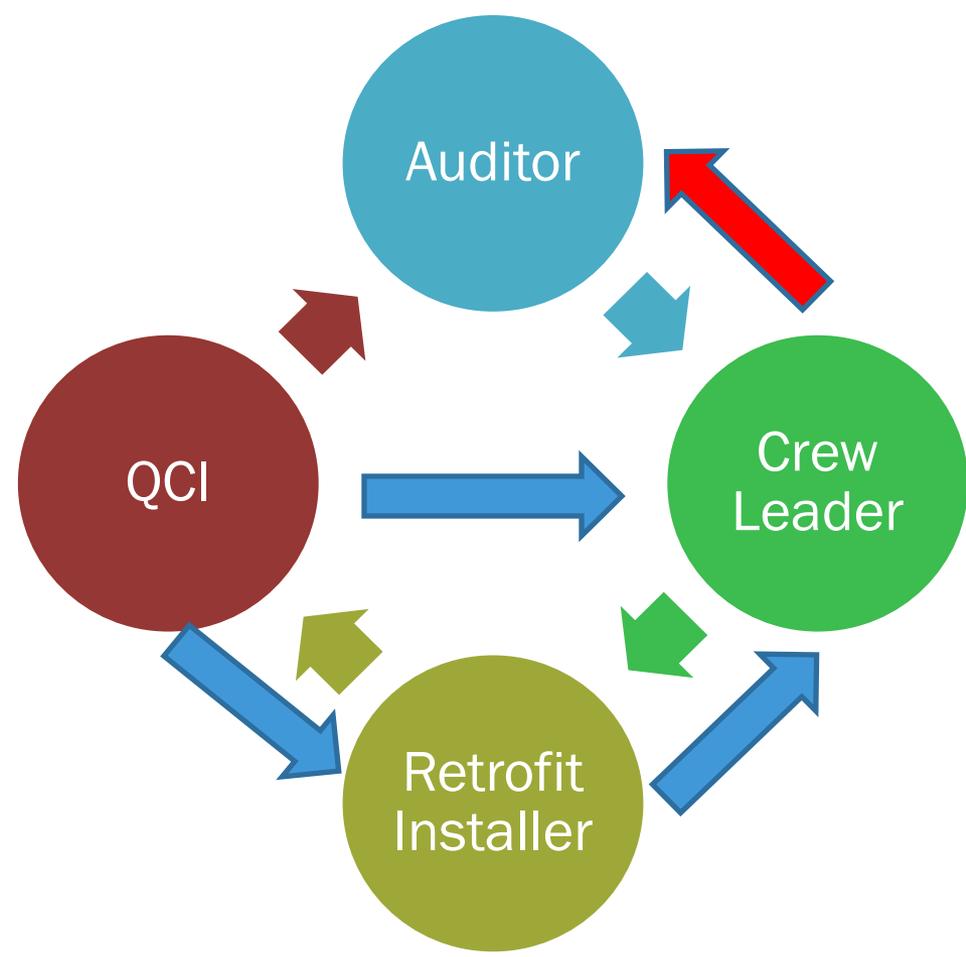


Chapter 3 Weatherization Materials

- Caulking and Adhesive Materials
- What are they and which are best?
 - Water based
 - Silicone
 - Polyurethane
 - Acoustical
 - Duct mastic
 - Stove Cement
 - Non Combustible caulk
 - Fire-rated Mortor
 - Construction Adhesives



Chapter 3 Weatherization Materials



Chapter 3 Weatherization Materials

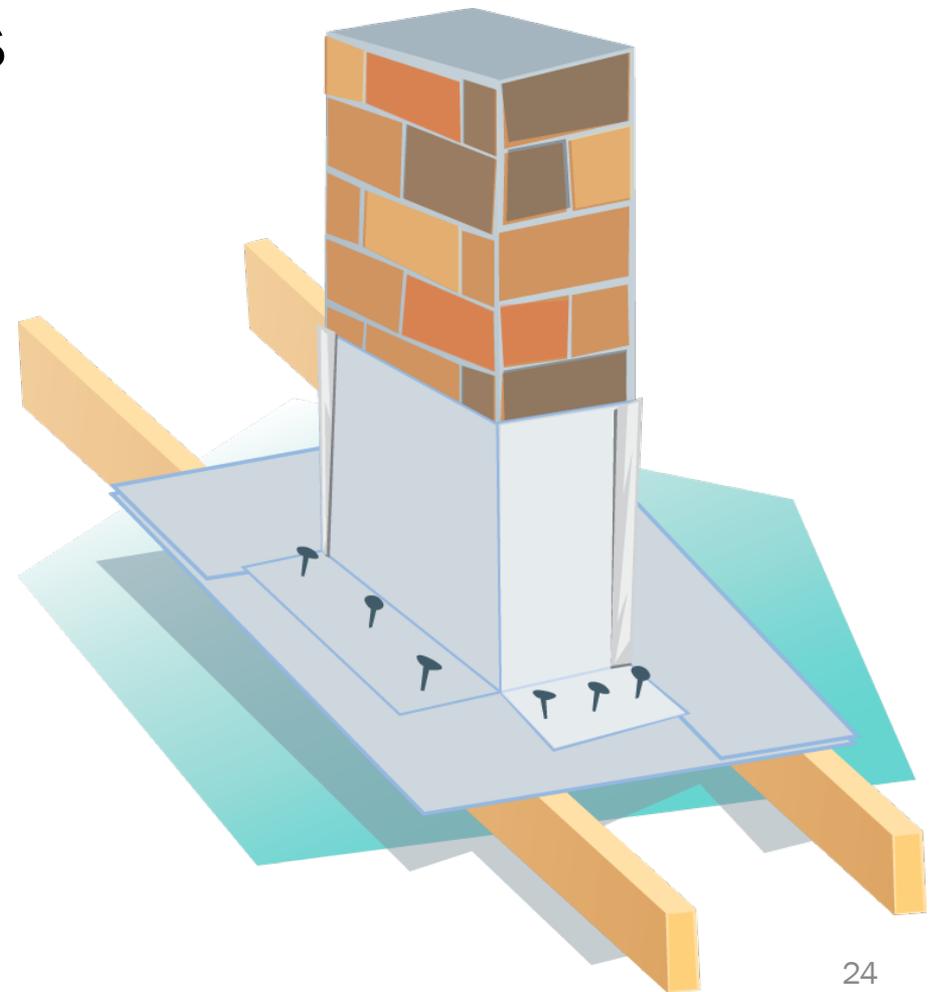
- Insulation materials
 - Pressure Boundary alignment, Why?
 - Cold and Wet
 - Windy

Chapter 3 Weatherization Materials

- One Part Vs. Two Part Foam
 - Advantages of one to another
 - Differences
 - Similarities
- Safety
 - Clients
 - Workers

Chapter 4. Attics and Roofs

- Air Sealing Chimneys
 - Fire safety
 - Technique
 - When is it needed

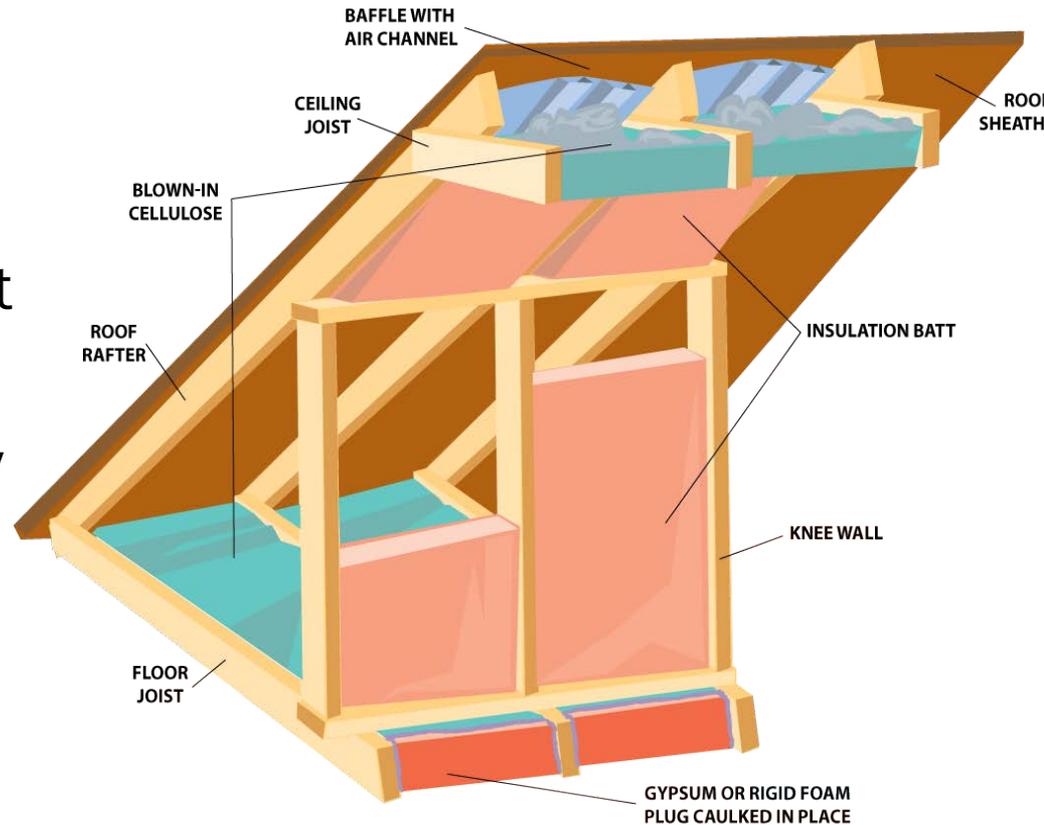


Chapter 4. Attics and Roofs

- Recess Lights
 - Air sealing
 - Fire protection
 - How to handle each Type
 - No Rating
 - IC Rated
 - ICAT Rated

Chapter 4. Attics and Roofs

- Kneewall Bypasses
 - Rigid backer necessary
 - dense pack only not acceptable
 - FG covered in spray foam constitutes a rigid backer



Chapter 4. Attics and Roofs

- Suspended Ceilings
 - Identifying the pressure and thermal boundary
 - The installed product at a ceiling boundary has to be the fire barrier

Chapter 4. Attics and Roofs

- Attic Hatch Requirements
 - Continuous R-Value
 - Gasketed and Air Sealed
 - Insulation Dam has be able to support a person entering the attic (115)
 - Work in progress