

Mold and Buildings: Differences Between Residential and Non-Residential Buildings

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Overview

1. Differences - investigating and remediating residential versus non-residential
2. Approach in residential investigations
3. Is mold the problem?
4. Mold testing?
5. Remediation



Differences - residential versus other types

- House as a system approach – building envelope, mechanical systems, seasonal conditions, **occupants**
- Occupants' impact more important concern in residential buildings
 - Lifestyle -- Temp/RH maintained, moisture management, use of humidification, dehumidification and ventilation system-if any present.
 - cooking, showers, laundry, cleaning habits etc.)
 - Overcrowding -- occupants
 - contents



Overcrowding - Contents



Overcrowding - Contents



Differences - residential versus other types

- **Multi-family buildings**
 - Various occupancies and operating conditions in each unit
 - Moisture sources or source of mold spores may be from outside suite where problem is being reported
 - Limited access to all areas or occupants' input
 - Investigating for property management or occupant?
- **Mechanical Ventilation – not as important as in non-residential buildings**
 - Not the main air change mechanism in low rise
 - Limited impact on IAQ in high rises & low rise suites
 - Not frequently a major mold amplifier

Differences - residential versus other types

- Basements are important mold source in houses
- Most basement problems due to exterior moisture sources
- RH management is another source of basement mold problems



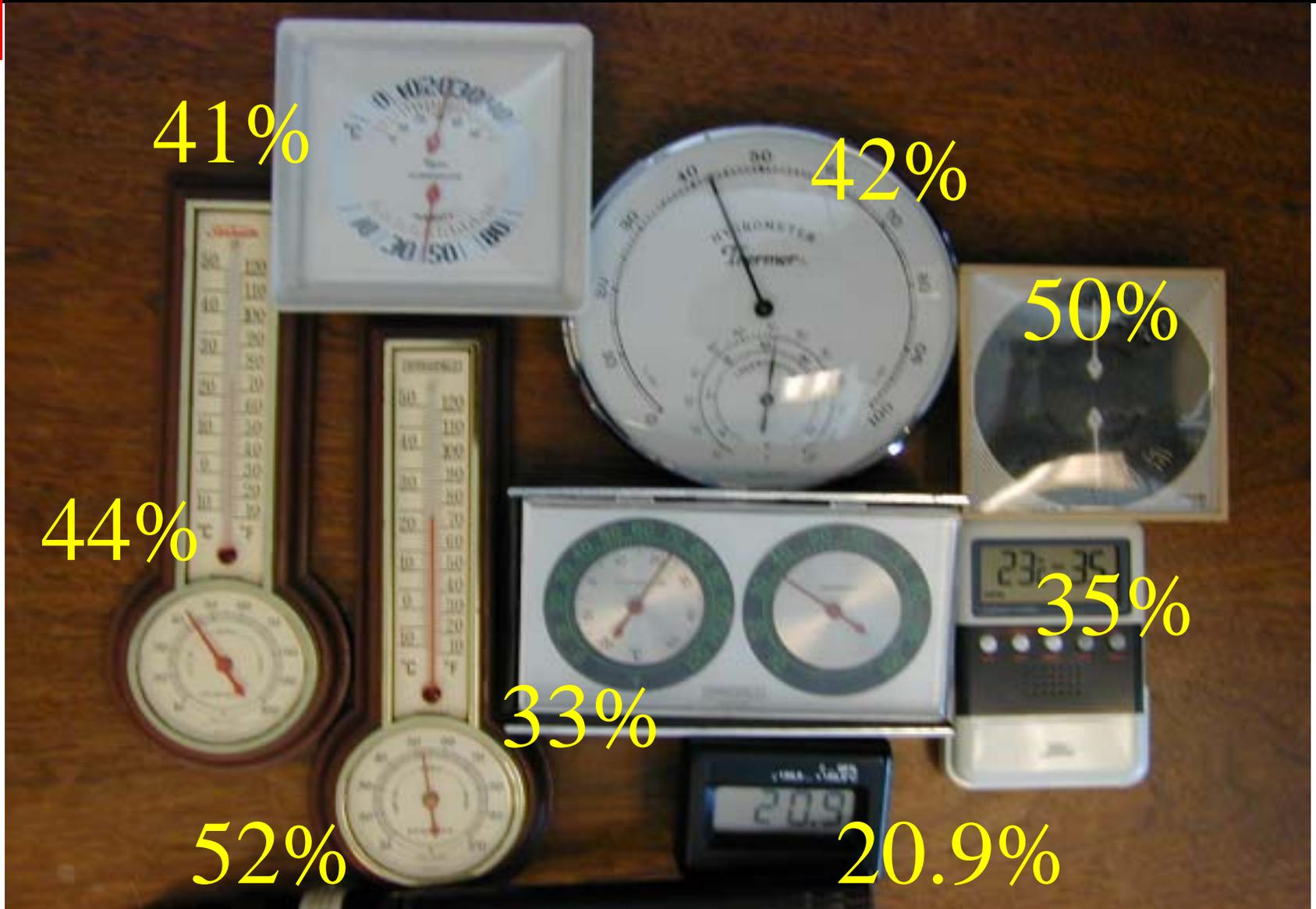
Differences - residential versus other types



Differences - residential versus other types



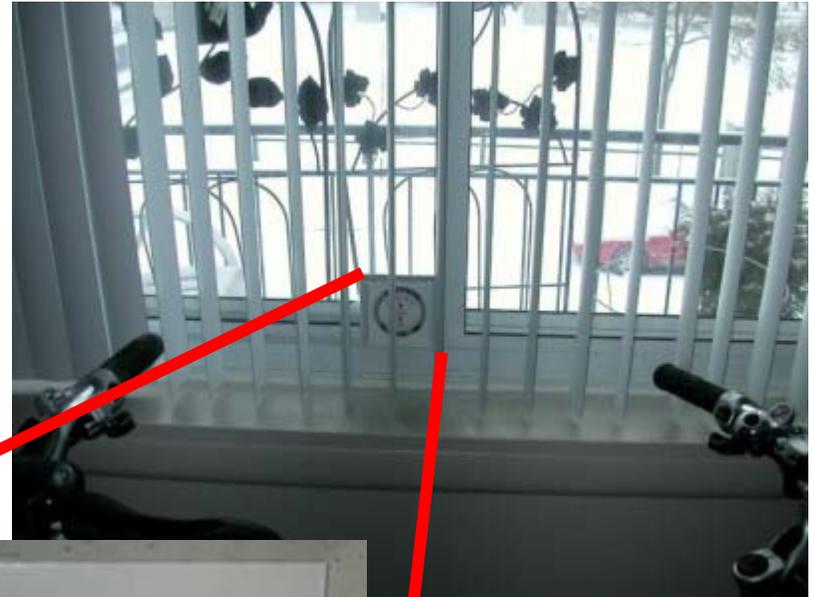
Ideal RH?



RH difference in same room

21.1°C int.

-4°C ext.



11°C on window sill

Approach in residential investigations

- Best tool is the investigator's knowledge of residential buildings and "House as a System"
- No need for most tools
- Can't rely on testing to find or resolve the problem
- Conditions at time of investigation may not be those that lead to the problem

Approach in residential investigations

- Informed inspection arguably best approach all the time but especially in residential



Is mold the problem?

- Investigate without a bias that mold is the problem



Is mold the problem?

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Is mold the problem?



Is mold the problem?



Is mold the problem?



Mold testing?

- Provides very little value to the investigation and towards solution
- Spend money on properly identifying the source of moisture and remediation instead of on testing and monitoring for mold



Remediation

- No special cleaning products required
- Bleach is not recommended anymore
- TSP on concrete
- No biocides or anti microbials
- Focus on moisture problem resolution to prevent return of mold
- Use less moisture-sensitive materials as part of solution
- If moisture source not resolved, mold will come back

Summary

- Consider occupants impact in residential investigations
- Health complaints aren't all mold related
- Best tool - knowledge of residential construction, building science, and “House as a System”
- Testing for mold is not necessarily useful
- Consider interior RH (winter/summer)
- Chemicals – not the solution in remediation
- Moisture source identification and repair is key

Questions? Comments?