

FIGHTING DR. MOON DENIALS

BASED ON PRESSED WOOD EXPANSION ANALYSIS



Instructor / Course Developer:

Gary Rosen, Ph.D. gary@mold-free.org

8-07-17

State Licensed: Mold Assessor; Mold Remediator; &
State Licensed Building Contractor; FLA Independent
Adjuster; Ph.D. Biochemistry UCLA

Questions for Ralph Moon or Others That Reference His Materials

- Here we analyze Ralph Moon's writings related to cabinet swell from water exposure.
- We pose questions that challenge his writings / conclusions.
- Questions and analysis are applicable to all other defense experts that reference his material.



Purpose: Challenge Junk Science



Dr. Moon references the Davis/Moon 2015 *Thickness Swell in Particle Board* in his many Insurance Investigation reports where he concludes that he has proof, by measuring pressed wood expansion, that the leak is long term. Therefore deny coverage.

Forensic Engineering 2015

Thickness Swell in particle Board: A Forensic Tool for the Duration of loss

Brett Davis, CRCI, and Ralph E, Moon, Ph.D.²

^{1,2} GHD, 4019 East Fowler Avenue, Tampa, Florida, E-mail:

Brett.Davis@ghd.com Ralph.Moon@ghd.com

Davis/Moon Presentation



Davis/Moon 2015 *Thickness Swell in Particle Board* is not a scientific study published in a major peer reviewed technical journal.



Davis/Moon 2015 *Thickness Swell in Particle Board* is a transcription of an oral presentation at the **Forensic Engineering** 2015 Conference sponsored by ASCE.org (American Society of Civil Engineers.)

Dr. Moon And Forensic Engineering Committee

Professional Affiliations:

Institute of Environmental Studies (IES) Board of Directors, University of South Florida; Restoration Advisory Board, MacDill AFB, Co-Chairman, 1995–2004, St. Petersburg Diocese Real Estate Advisory Board, 1999–2014; Hillsborough County Minority Business Citizen Participation Committee, chairman, 2000–2012, ASCE Forensic Engineering Committee

- Moon was the ASCE Forensic Engineering Committee chair for 12 years.
- His presentations at Forensic Engineering Conferences [such as Davis/Moon 2015] I'm sure were thoroughly Peer-reviewed by Independent Reviewers!

Purpose: Challenge Junk Science

- We have carefully analyzed the Methods; Results; Discussion; and Conclusions provided by Davis/Moon 2015.
- Through our analysis, the reader will see that the article is not actually a scientific investigation but is a mix of sloppy work; misdirection; and phony conclusions.
- Much more than Junk or Pseudo-Science. This work is Fake Science as we shall see.



We will show beyond any doubt that the Davis/Moon 2015 study on pressed wood expansion is Fake Science. Because it is Fake Science, our courts should not permit Davis/Moon 2015 to be referenced as a basis for denial of any Insurance Claim.

List of Questions

Disqualify Moon



Disqualifying Moon as an Expert.



We provide a list of questions from Davis/Moon that can be used by Plaintiff Attorneys to challenge Dr. Moon at a Daubert hearing in order to disqualify him as an expert on any denial based on pressed wood expansion analysis.



Fighting Dr. Moon Denials on Rust. See ...

Fighting Dr. Moon Denials Based on Rust Analysis

6-5-17

By Gary Rosen, Ph.D.

State Licensed: Mold Assessor; Mold Remediator; &
State Licensed Building Contractor; FLA Independent
Adjuster; Ph.D. Biochemistry UCLA

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Fighting Dr. Moon Denials on Rust. See ...

Fighting Dr. Moon Denials Based on Mold Growth Profiles

8-9-17

By Gary Rosen, Ph.D.

**State Licensed: Mold Assessor; Mold Remediator; &
State Licensed Building Contractor;
Certified Hygienist; Ph.D. Biochemistry UCLA**

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Who is Dr. Ralph Moon



Forensic Engineering

Forensic engineering education requirements

Forensic Engineer Education. Unlike other professions, forensic engineering programs are non-existent. Instead, a prospective forensic engineer must first earn an **engineering** degree, pass a difficult exams, then complete a process focusing on **forensic engineering**.



Not a Forensic Engineer



Moon is not a Forensic Engineer based on the definition on the previous page.



He is NOT an engineer.

But What is He?



Ralph E. Moon, Ph.D. CHMM, CIAQP Principal/Building Scientist

Qualified (Education): Post-Doctoral Fellowship, University of South Florida, Department of Chemistry 1981-1982; Ph.D. Department of Biology, University of South Florida, 1980; MS Department of Biology (Botany), University of South Florida, 1975; BS Department of Biology, Western Michigan University, 1972

Professional Summary: Dr. Moon specializes in the determination of the cause, origin and duration of water losses associated with insurance claims. In this capacity he conducts site investigations and, when necessary, serves as an expert witness representing either the defendant or plaintiff when an insurance claim seeks resolution in court. Dr. Moon supports his opinions with results obtained from published research studies of which he is a contributing author.

- According to his resume Moon is Biologist by Education.
- He “specializes in the determination of the cause, origin and duration of water losses associated with insurance claims.”

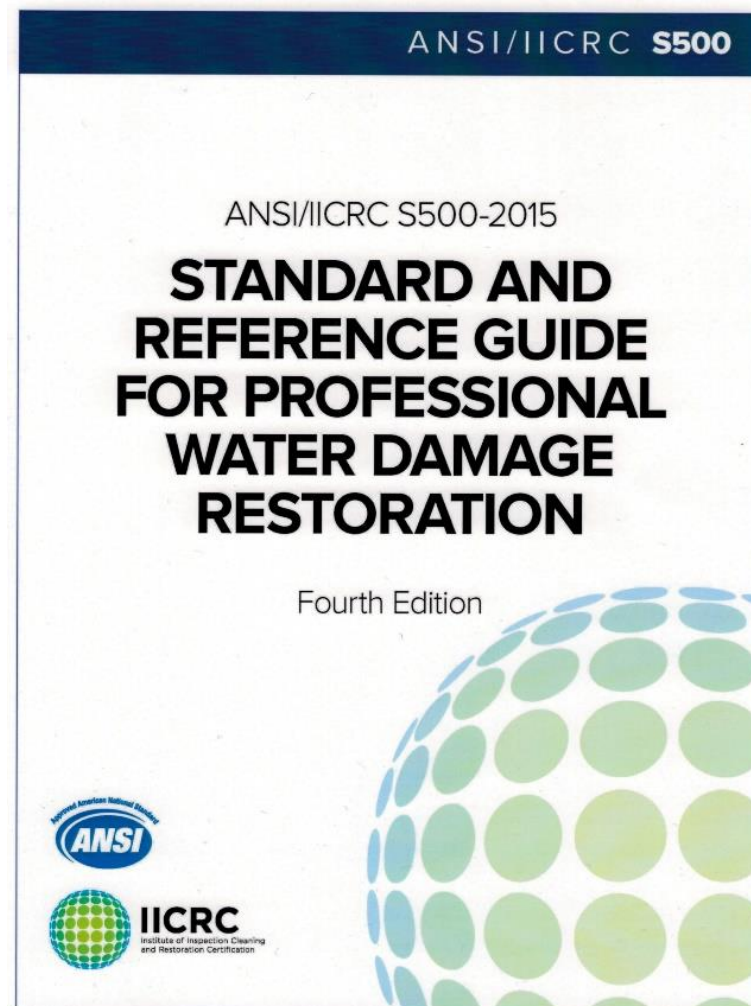
He is NOT...



While a self proclaimed specialist according to his resume “in the determination of the cause, origin and duration of water losses **associated with insurance claims**”



Moon is NOT certified NOR trained in ANSI/IICRC S500-2015 Standard for Professional Water Damage restoration.



Professional Water Damage Standard



According to this ANSI (American National Standards Institute) approved standard ...



“It is the purpose of this Standard [IICRC S500-2015] to define criteria and methodology used by the restorer for **inspecting & investigating** water damage and associated contamination...”

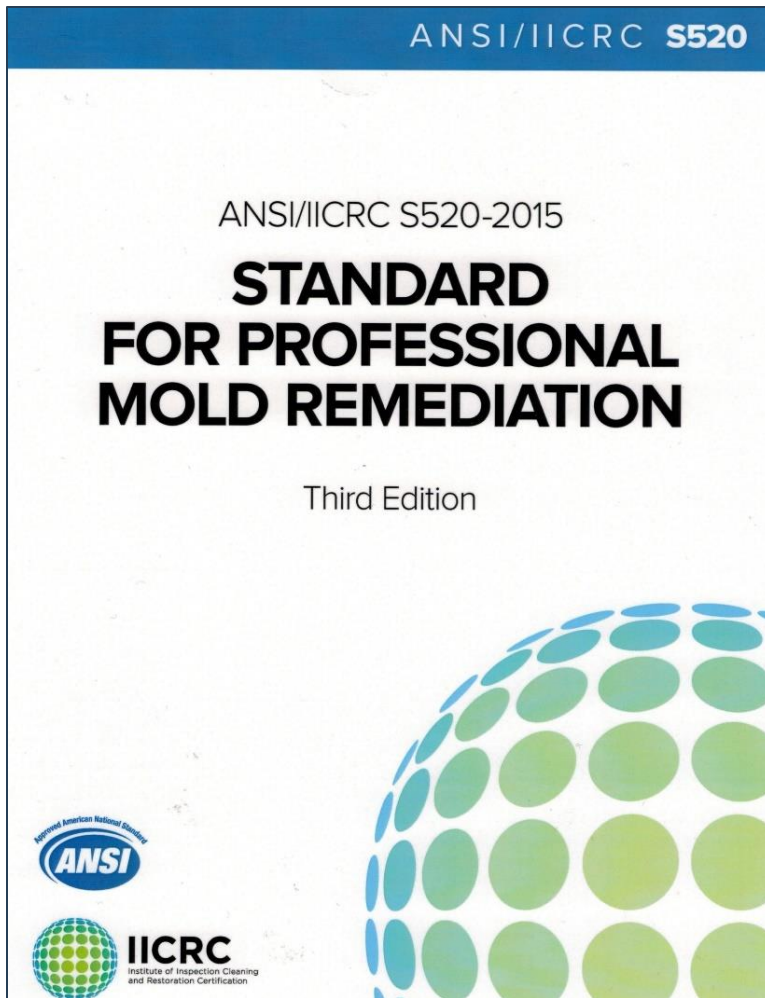


There are no other such ANSI approved standards on inspecting and investigation water damage.



Moon is **not trained or certified** in ANSI/IICRC S500-2015 which is the only such standard for inspecting and investigating water damage.

He is NOT...



Neither is Moon certified or trained or licensed in Professional Mold Remediation.

According to this ANSI (American National Standards Institute) approved standard, the Purpose of the Standard is...



Professional Mold Remediation Standard

- “It is the purpose of this Standard to define criteria and methodology to be used by remediators for **inspecting mold contaminations and establishing remediation procedures ...**
- There are no other such ANSI approved standards for inspecting mold contaminations.
- Moon is not trained or certified in ANSI/IICRC S520-2015.



Moon Supports His Decisions



Ralph E. Moon, Ph.D. CHMM, CIAQP Principal/Building Scientist

Qualified (Education): Post-Doctoral Fellowship, University of South Florida, Department of Chemistry 1981-1982; Ph.D. Department of Biology, University of South Florida, 1980; MS Department of Biology (Botany), University of South Florida, 1975; BS Department of Biology, Western Michigan University, 1972

Professional Summary: Dr. Moon specializes in the determination of the cause, origin and duration of water losses associated with insurance claims. In this capacity he conducts site investigations and, when necessary, serves as an expert witness representing either the defendant or plaintiff when an insurance claim seeks resolution in court. Dr. Moon supports his opinions with results obtained from published research studies of which he is a contributing author.

- Last sentence of Professional Summary: "Dr. Moon supports his opinions with results obtained [solely] from his own research."

Moon Does Have a Great Deal of Experience ...



He has a great deal of experience on expressing his opinions on the “cause, origin and duration of water losses associated with **insurance claims**” as his resume states.



And the basis of these opinions are studies paid for by insurance companies and either published in Insurance Claims Magazine or presented at conferences to other “Forensic Engineers” who also work for the most part for insurance carries.





CLAIMS MAGAZINE ARTICLES BY MOON

Before We Look at the Davis/Moon Paper 2015 ...

- Before we look at the Davis/Moon 2015 paper on dating a water event using pressed wood expansion ...
- Let's look at two prior publications by Dr. Moon.

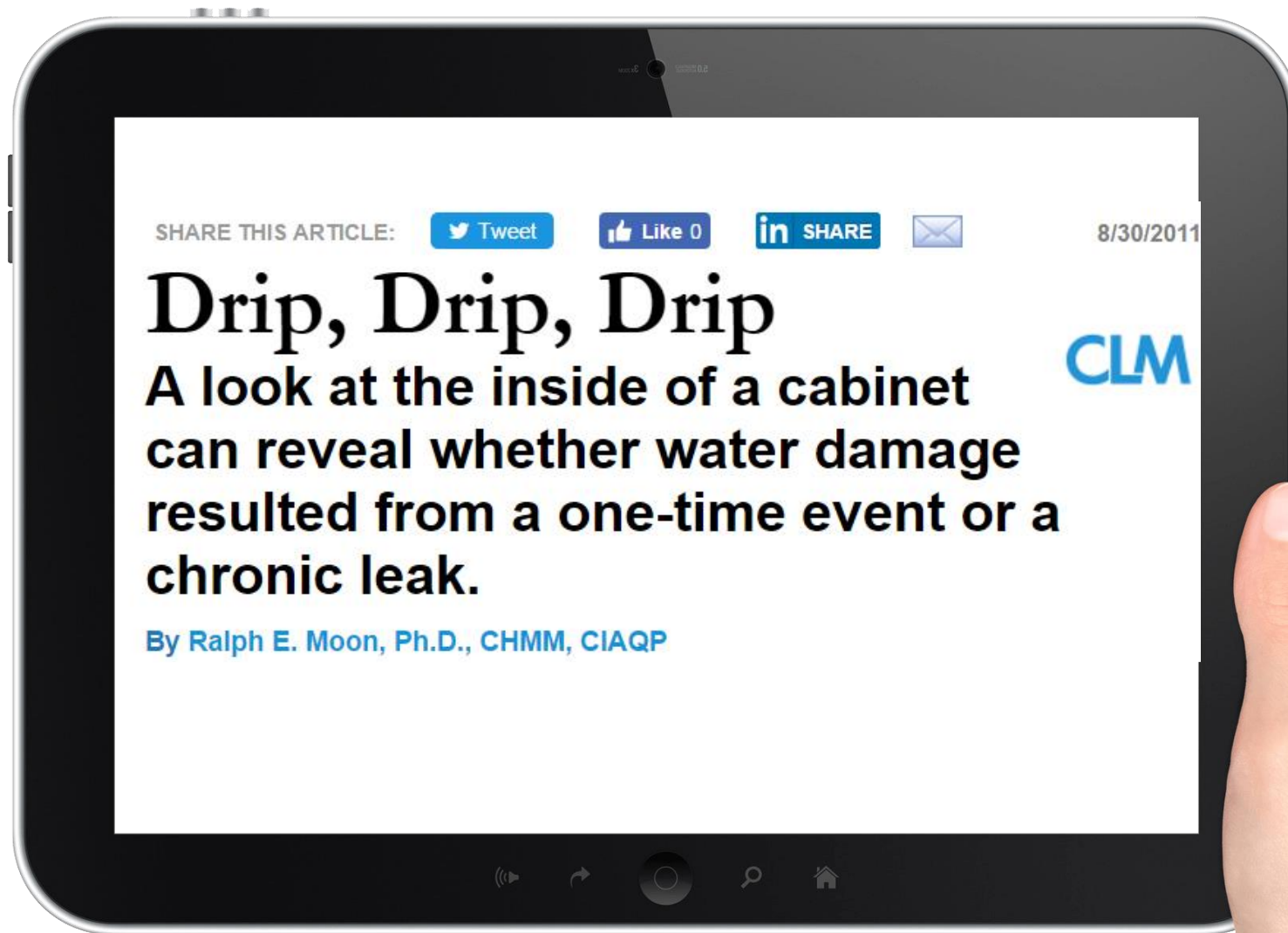


These publications contradict everything in the 2015 paper that claims that pressed wood expansion can be used to accurately and reliably date a water event for the purpose of denial of coverage.



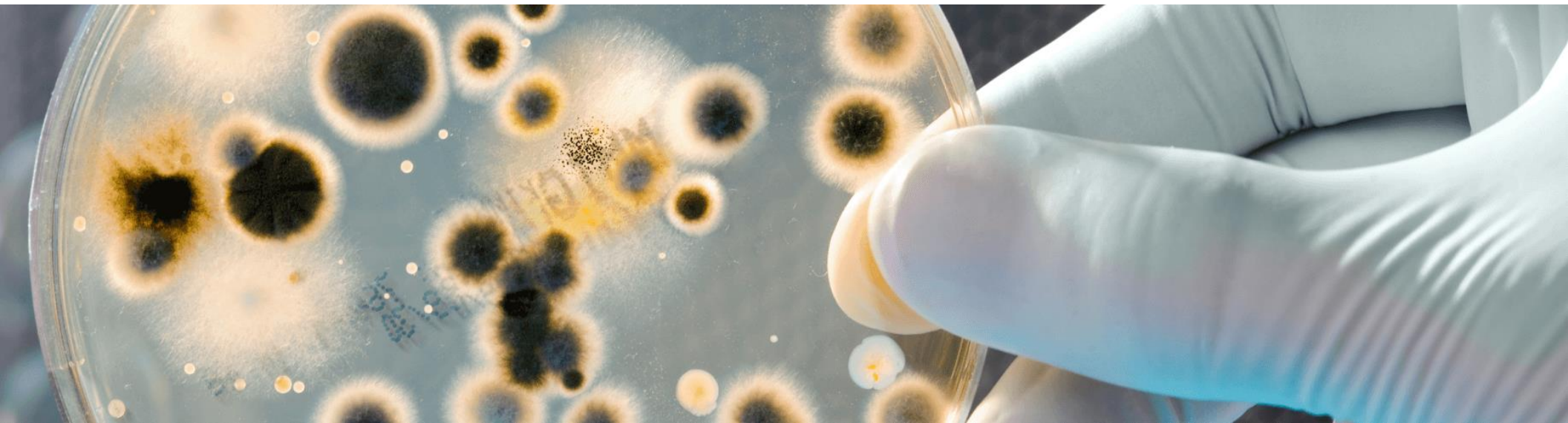
Not surprisingly Dr. Moon did not reference either of these prior papers in the newer (Davis/Moon 2015) paper that comes to an opposite conclusion.

by Dr. Ralph Moon



Excerpt from Dr. Moon's Article Drip, Drip, Drip

- In the first experiment, all of the unfaced particleboard bases supported prolific microbial growth after Day 11.
- ***The extent to which microbial growth weakened the unfaced particleboard is unknown;***



- Heavy mold by Day 11. The extent this weakens the particle board unknown according to Moon.
- Questions for Moon: Did the experiments in Davis/Moon 2015 have microbial growth? Were they weakened? How did this weakness affect swelling? Why no pictures of mold and mold growth over time in Davis/Moon 2015? Etc.

Falsehood/Fiction/Untruth

Page 197 Davis/Moon 2015

Adhesive type and wood particle homogeneity influence the mechanical properties of particle board.

However, no previous studies have examined the factors that affect TS following continuous moisture beyond 24 hours (Hofferber et al. 2006)

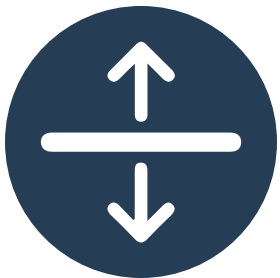
- In Davis/Moon 2015 it says that there were no previous studies on particle board TS (Thickness Swell). See above.
- But what about *Drip Drip Drip* by Dr. Moon a few years before? That is clearly such a study!
- How can Dr. Moon say no previous studies? Well, because he wants us to forget that his previous studies contradict what's in Davis/Moon 2015.
- Earlier studies prove Davis/Moon 2015 is junk science.

Excerpt from Dr. Moon's Article Drip, Drip, Drip

- *Once moisture is absorbed and swells the exposed particleboard edge, a repeated water release will flow to areas of lower elevation of the base, and the consequential swelling will create a "bowl-like" appearance.*



Leaks from below will result in sink cabinet floor side edge swelling first due to sink cabinet feet standing in water that is absorbed and moves upwards ...creating a "bowl-like" appearance in the sink cabinet floor.



Thicker at the edges. Thinner in the middle.

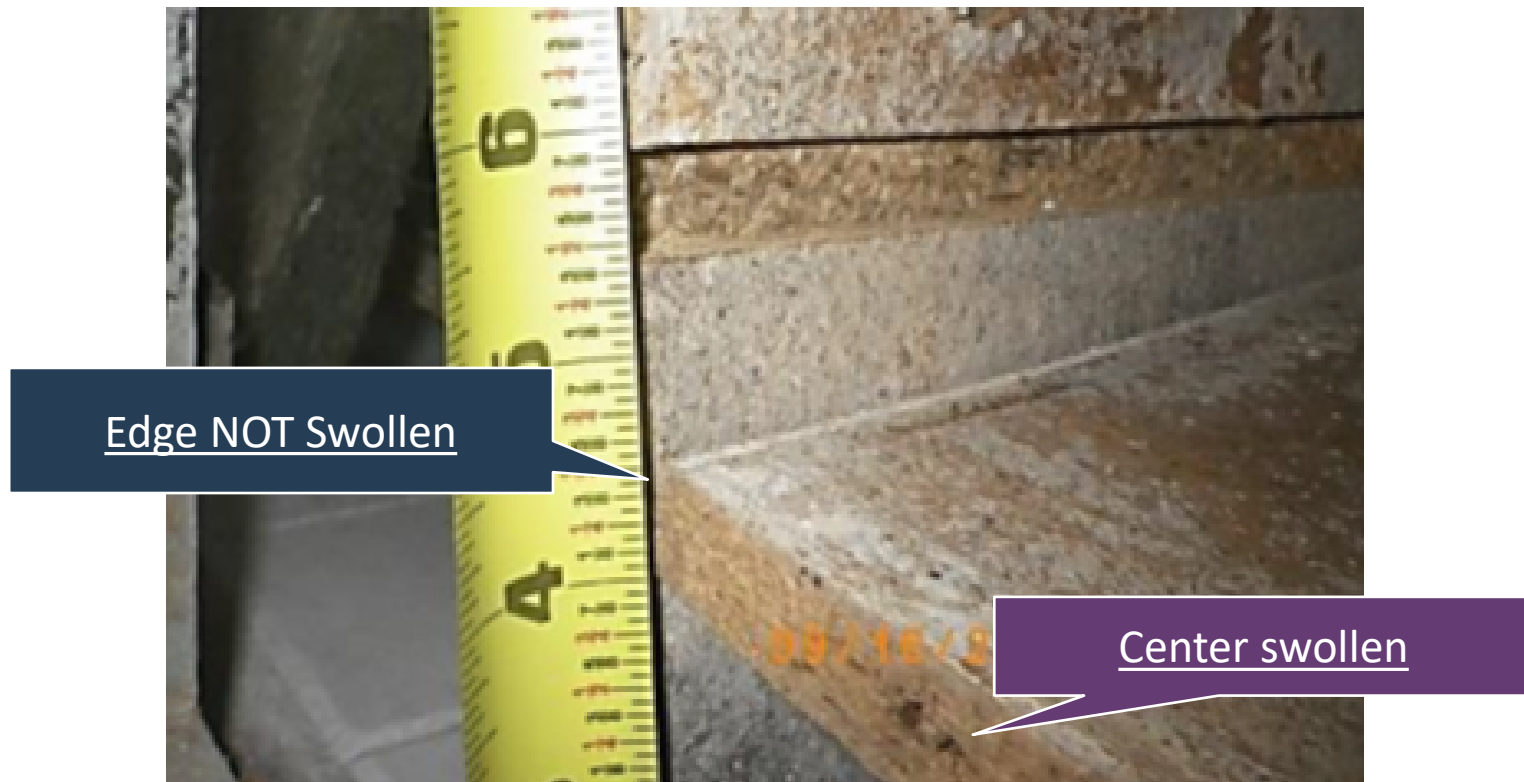
Excerpt from Dr. Moon's Article Drip, Drip, Drip

- If the side edges of the sink cabinet floor are not swollen but the center of the cabinet floor is swollen then it is from a drip from above.
- Side edge of sink cabinet floor (blue arrow) thin. Not swollen. Middle of particle board swollen (yellow arrow). Not "bowl-like".



Excerpt from Dr. Moon's Article Drip, Drip, Drip

- Sides thin. Center swollen due to dripping from above.
- Moisture did not seep up cabinet legs from below. Came from the top (sink, or garbage disposal leak.)



Check the Sink Floor Side Edge

If there is long term damage to the sink cabinet floor center but the edges of sink floor are not swollen this means the damage to the sink floor is not related to the flood from below.

Nevertheless, the so-called expert is going claim that any indications of long term swelling of the sink cabinet floor center means the leak below (soaking the legs but not the panel sides) is also long term. But these of course are not related. Don't be tricked.



by Dr. Ralph Moon

<http://clmmag.theclm.org/home/article/feeling-the-heat>

10/20/2009

Feeling the Heat

Hot water can warp an adjuster's perspective on water-damaged wood composite materials.

By Ralph E. Moon, Ph.D., CHMM, CIAQP

Excerpt from *Feeling the Heat*

As defined by the USDA, the term fiberboard includes hardboards, medium density fiberboard (MDF) and insulation board. Fiberboard is distinct from particleboard because, during its manufacture, long strands of wood fiber bundles are intentionally created with the intent of using the inherent strength of cellulose fibers. Fiberboard is preferred for furniture and cabinetry construction because fiberboard is easily machined and finishes to a uniform surface that is excellent for paint and decorative overlays. Because composite materials are hygroscopic, **MDF swells irreversibly when it contacts water**, the USDA founds.



Particle board cabinets swell irreversibly when they contact water Dr. Moon's article says.



So why does it matter how long the water exposure is (long or short) when it comes to covering the loss since once wet and irreversibly damaged, the cabinet needs to be replaced?

Excerpt from Feeling the Heat

Water losses lead personal property claims in the U.S., but are they as well understood as they are widely prevalent? A recent study shows that when medium density fiberboard (MDF), non-faced particleboard and Melamine (faced particleboard) are exposed to water, dramatic dimensional changes occur at water temperatures above 85°. **The swollen appearance of these wood composite materials was consistent with long-term exposure to moisture, although the exposure period was only 30 minutes.** The test results underscore the importance of understanding the effects of elevated water temperatures on composite wood materials used in cabinetry, furniture and trim when supporting decisions of duration loss.

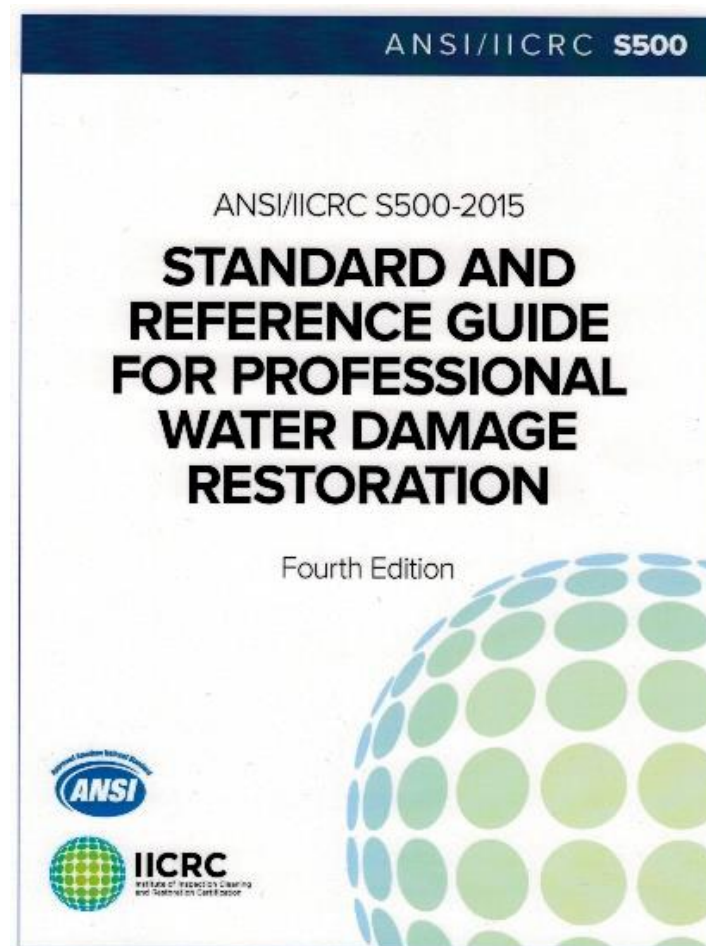


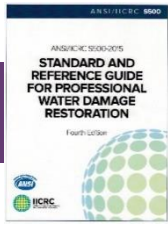
Swollen appearance **consistent with long term exposure ,although exposure was only 30 minutes.**



Of course there is often hot water (much hotter than 85 degrees) that goes down the sink drain and leaks onto pressed wood sink cabinet bottoms.

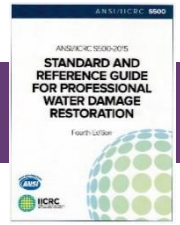
ANSI/IICRC S500-2015





ANSI/IICRC S500–2015 Should

Page 197 Davis/Moon 2015



Should: When the term should (previously “highly recommended”) is used in this document, it means that the practice or procedure is a component, it means that the practice or procedure is a component of the accepted “standard of care” to be followed, while not mandatory by regulatory requirement.

Standard of care: Practices that are common to reasonably prudent members of the trade who are recognized in the industry as qualified and competent.

- Should in IICRC speak means required to conform to the industry standard of care.

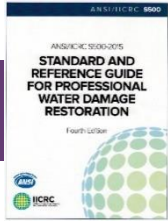


Sewage Leak = Cat 3



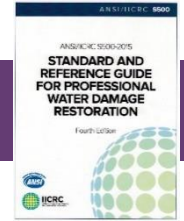
Sewage leak from waste line break behind the cabinets hidden in wall = Category 3 water damage.





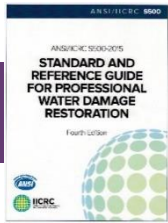
ANSI/IICRC S500-2015 Should

Page 197 Davis/Moon 2015

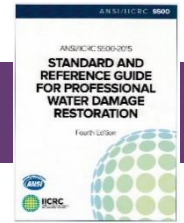


Category 3: Category 3 water is grossly contaminated and contain pathogenic, toxigenic, or other harmful agents and can cause significant adverse reactions to humans if contacted or consumed. Examples of category 3 water can include, but are not limited to: sewage; **wasteline blackflows that originate from beyond the trap regardless of visible content or color**; all the forms of contaminated water resulting from flooding from seawater: rising water from rivers or streams: and other contaminated water entering or affecting the indoor environment, such as wind-driven rain from hurricanes, tropical storms, or other weather-related events if they carry trace levels of contaminants (e.g., pesticides or toxic organic substances.)

- Category 3 water includes waste line backflows from beyond the trap, any trap not only toilet traps.



Cat 3 Exposed Particle Board



17.3.2.1 Remove and replace in category 2 or 3 intrusion

Following a **category 2 or 3 water intrusion**, affected materials or assemblies **that should be removed and replaced include, but are not limited to:**

- Carpet cushion (pad, underlay)
 - HVAC internally lined duct board;
 - HVAC external insulation on metal duct;
 - Wall insulation (e.g., loose fill, cellulose, mineral wool, fiberglass, open-cell foam);
 - Particleboard or MDF; and
 - Many multi-layer flooring systems (e.g., laminate, vinyl sheet, parquet, engineered wood) under which category 2 & 3 water has migrated cannot generally be sufficiently dried, cleaned, or sanitized
-
- Not only sewage exposure, but particle board cabinets exposed to either Category 2 or 3 ...
 - **Remove and replace per ANSI/IICRC S500-2015**

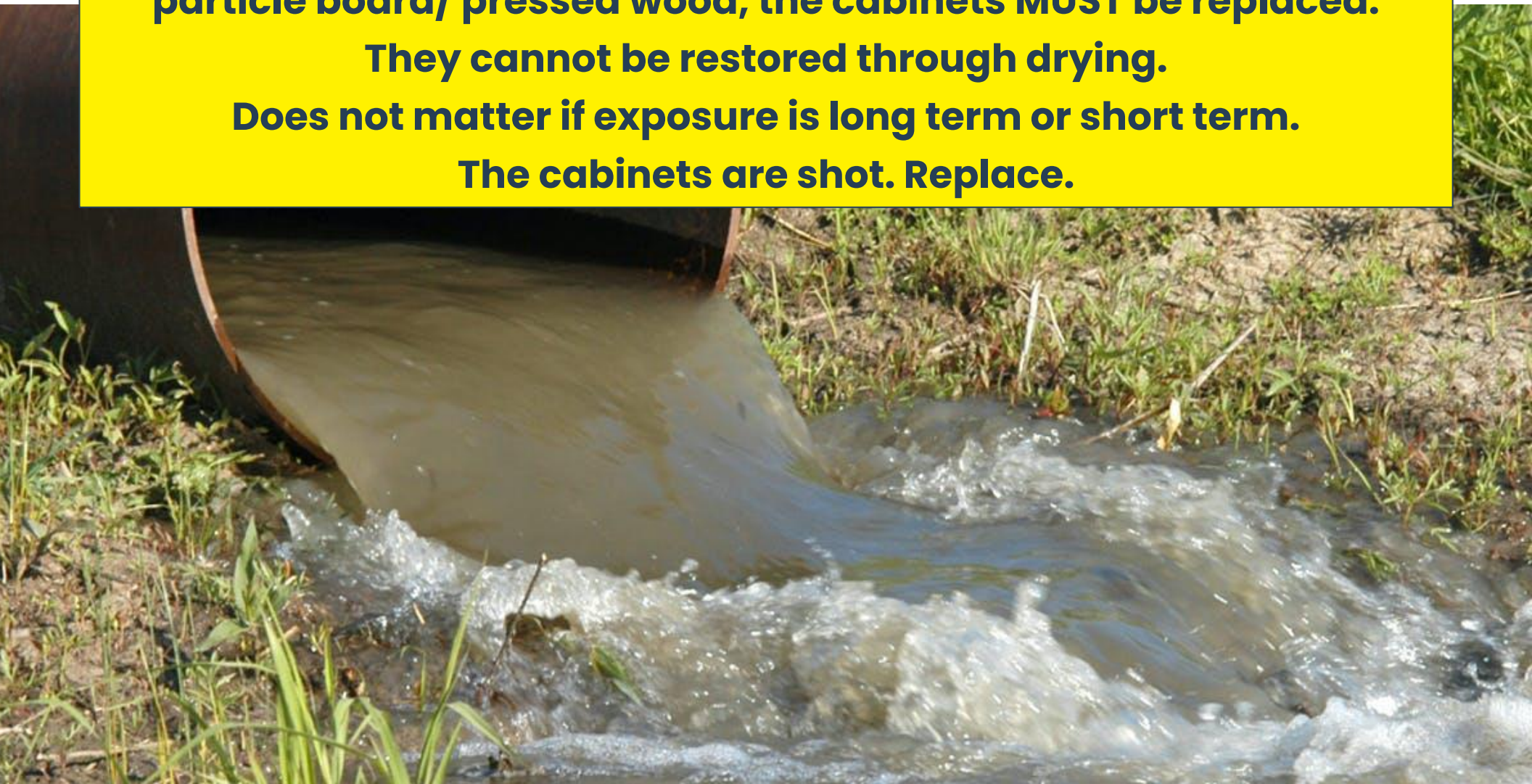
Sewage is NOT Water

Per ANSI/IICRC S500-2015 (Industry Standard of Care for Water Damage Restoration) if a wasteline (sewage) leak contaminates particle board/ pressed wood, the cabinets MUST be replaced.

They cannot be restored through drying.

Does not matter if exposure is long term or short term.

The cabinets are shot. Replace.



Sewage is NOT Water

None of the Ralph Moon studies (including Davis/Moon 2015) that attempt to date long term/vs short term based on thickness swell of particle board are relevant to Cat 2 or Cat 3 (including sewage) contamination.

Cat 2 or Cat 3 (including sewage) exposed particle board cabinets cannot be dried to mitigate damage. Must be replaced.



Sewage is NOT Water

Category 1 water can deteriorate to category 2 or 3. Category 1 water that flows into an uncontaminated building does not constitute an immediate change in the category. However category 1 water that flows into a contaminated building can constitute an immediate change in the category. Once microorganisms become wet from water intrusion, depending upon the length of time that they remain wet and the temperature, they can begin to grow in numbers and can change the category of the water. Odors can indicate that category 1 water has deteriorated.

Keep in mind Per IICRC, Category 1 water (Clean water) rapidly deteriorates to Cat 2 and 3 (contaminated water).

Microbial growth on pressed wood is Cat 3 contamination. Requires that material be discarded. Not restorable. No time frames!

PEER REVIEWED?





Before we jump into the Davis/Moon 2015 paper ...



When Dr. Moon prepares reports that “prove” long term leak therefore deny claim based on Peer-reviewed work (that he authored), what does Peer-reviewed mean?



Example taken from Moon report that found for claim denial:
“Peer-reviewed studies describing the effects of moisture absorption by particle board panels and cabinet bases reported...”

Peer Review Deception

- Understand that Forensic Engineering 2015 Conference in which Davis/Moon 2015 is found is not a Journal. It is a transcript of oral presentations from the Conference.
- Unlike for an actual Journal Publication, for oral presentations only the abstract is Peer-reviewed. Not what is inside the talk.

Forensic Engineering 2015

Performance of the
Built Environment



Peer Review Deception

- In the case of the Forensic Engineering 2015 conference where Davis/Moon presented (along with 88 others), the Peer review process is subcontracted to the conference organizer: MiraSmart.
- MiraSmart manages the “Peer” Review.

[HTTP://WWW.MIRASMA
RT.COM/REVIEW/](http://www.mirasmart.com/review/)

INTUITIVE ABSTRACT
MANAGEMENT



Peer Review Deception

Calling an oral presentation that has its abstract reviewed as being Peer Reviewed is a scam.

And even then ... Who did the review?

What are their qualifications and backgrounds?

Another Forensic Engineering firm that works for Insurance Carriers?

So let's not put too much weight on the Peer Review process of Moon's conference presentations!

QUESTIONS FOR MOON REGARDING DAVIS/MOON 2015

Forensic Engineering 2015

Thickness Swell in Particle Board; A forensic Tool for the Duration of loss

Brett Davis, CRC¹; and Ralph E. Moon, Ph.D.²

^{1,2}GHD, 4019 East Fowler Avenue , Tampa, Florida. E-mail: Bret.Davis@ghd.com;

Ralph.Moon@ghd.com

Questions for Moon on First Paragraph of Presentation

The Study examined five factors that influence TS: product thickness, binding adhesive, presence and type of a coating, surfacants, and particle board density.

What about the other important factors such as:



Temperature which in a previous Moon study (Feeling the Heat) said "Swollen appearance **consistent with long term exposure, although exposure was only 30 minutes**".



Mold growth where Moon said ... *The extent to which microbial growth weakened the unfaced particleboard is unknown;*



Sewage exposure rather than water? Category 3 water exposed particle board cabinets ... Remove and replace per ANSI/IICRC S500-2015. No issues about duration of exposure per IICRC.

Questions for Moon on 2nd Paragraph

Excerpt from
Dr. Moon
2nd Paragraph

The test results revealed that some circumstances offer a reliable technique to estimate the duration of a one time, continuous water loss when combined with other facts and observations.

- “Some circumstances offer a reliable technique to estimate the duration of time”.
- Questions for Moon. **What circumstances reliable? What circumstances not reliable? What about with sewage? Hot water? Microbial growth?**
- On the one hand ...“Some circumstances offer a reliable technique to estimate the duration of time”.
- But Moon also makes the following statement in his recommendations to deny coverage: “median thickness swelling height corresponded to extended duration of constant or repeated moisture exposure of 48 days. This estimate was reported within a **95% confidence interval of 39 to 58 days** (Davis et al., 2015).”

Questions for Moon on 2nd Paragraph

- How does Moon reconcile these two statements?
- Only some circumstances **may be reliable**; and then 95% confident of exposure for 48 days.
- If you carefully read through Davis/Moon 2015 nowhere does it show a 95% confidence interval of anything that makes sense.
- Or anything that applies to the current water event.
- 95% confidence of exposure for 48 days is a complete falsehood, untruth, deception.

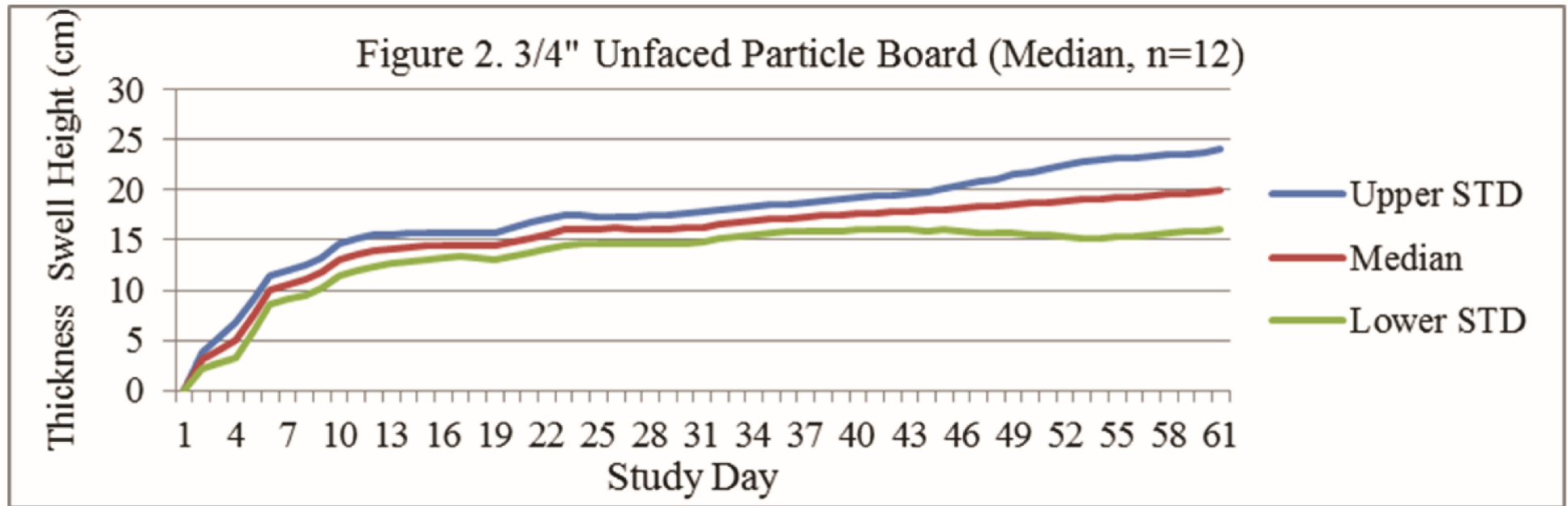


Questions on Materials & Methods 2nd Paragraph

Bump and by a penetrating moisture meter (Tramex) to located the FSP. Three panel location measurements (**front, center, and back**) were collected each day during the first two weeks and at lesser frequency thereafter. The measurements were manually

- Moon's measurements were at the **front, center and back** of the sink cabinet floor. (Not the sides.)
- But if the water was coming from a pipe leak behind or to the side of the sink cabinet, then sink floor sides would be first affected from moisture coming up from the wet legs. But his study did not look at TS of particle board sides.
- If the water was coming from anywhere but above the panel, damage to the panel would first affect sink cabinet floor panel sides.
- Question for Moon. How is this study in any way relevant to leaks coming from anywhere but above the sink cabinet base?

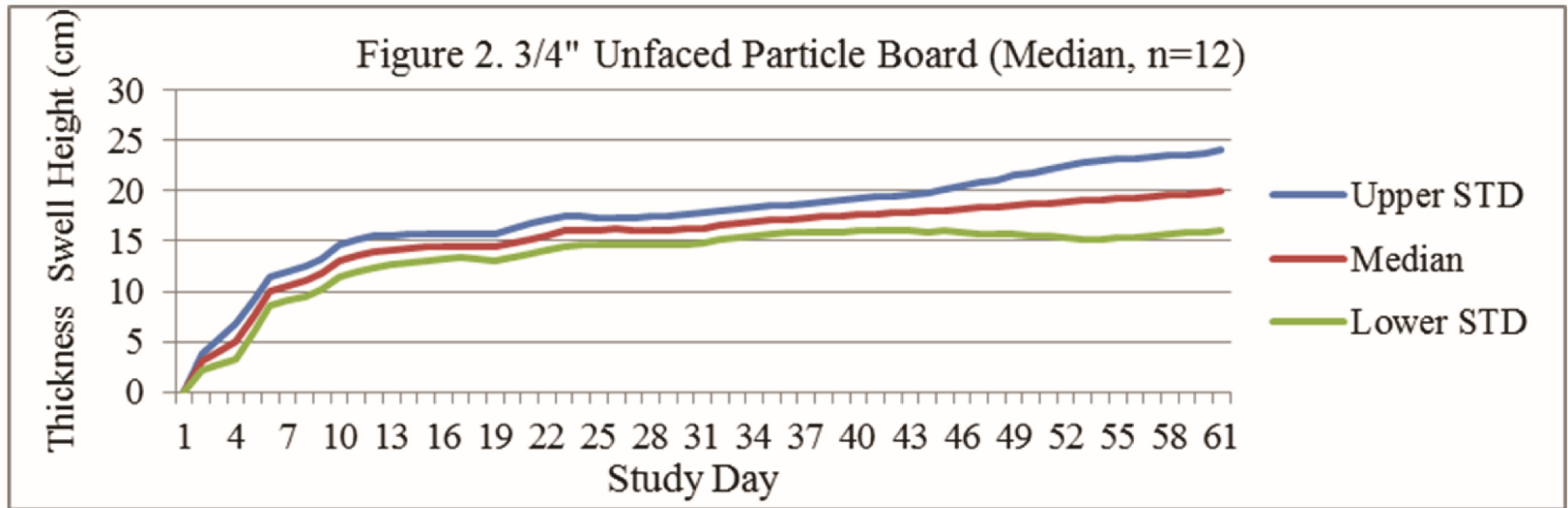
Questions on Figure 2



TS among three particleboard panels of different thickness: Median TS values were plotted over the course of 60 days in addition to a collective average TS value. The data reveals a characteristic observed throughout the study, rapid initial absorption for a period of approximately 12 days followed by a slower, linear rate.

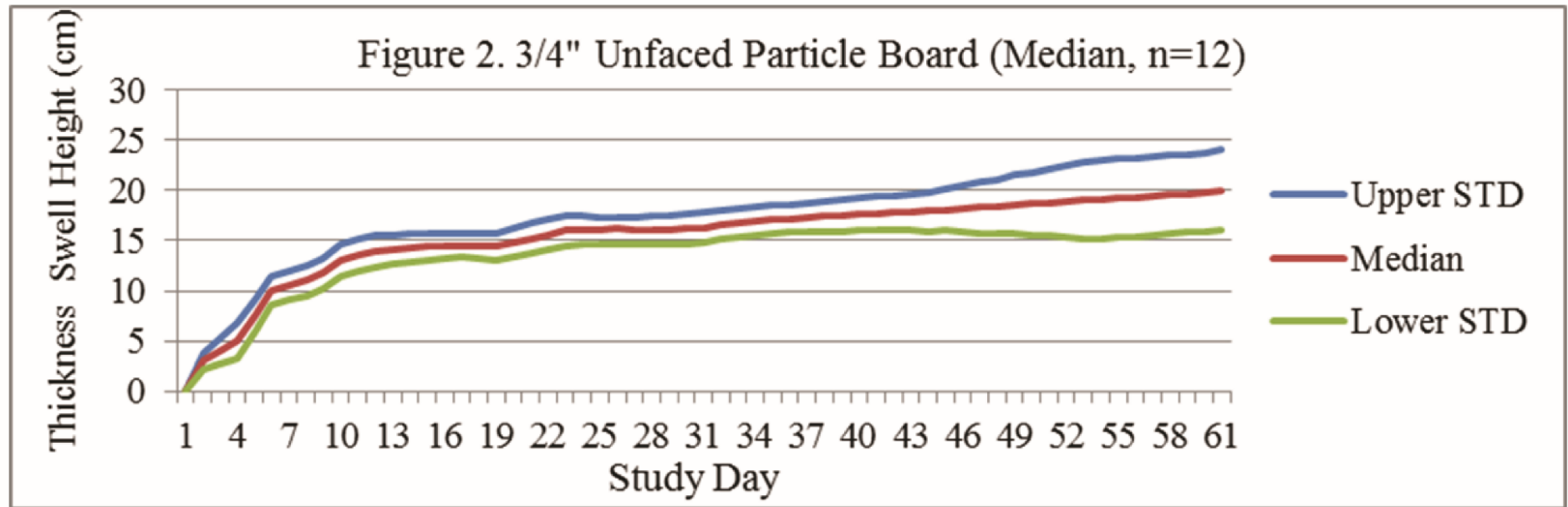
Question for Moon: If the particle board is damaged irreversibly in the first 12 or so days of rapid expansion, what is the incremental cost to the carrier to replace, if the damage was not identified until let's say day 15?

Questions on Figure 2



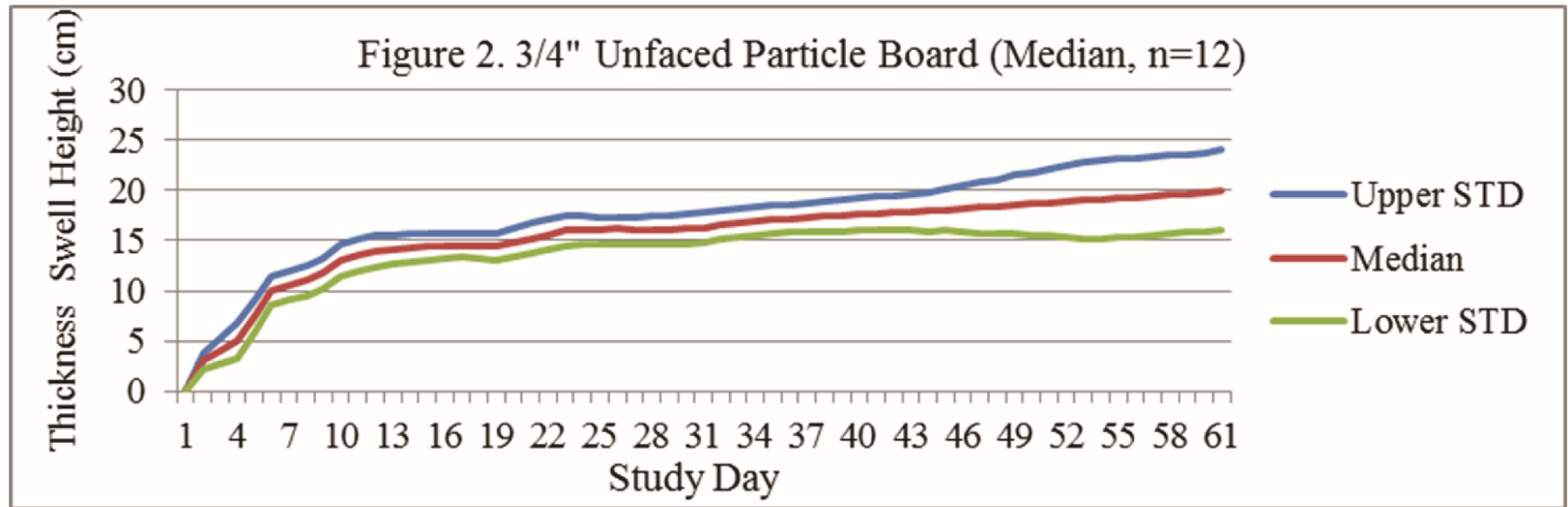
- It appears from this graph that almost all damage occurs in the first 10-12 days followed by a flat period.
- Question for Moon: From this chart how can you tell if the damage occurred for 10-12 days or lets say 31 days? Impossible because flat between those periods.

Questions on Figure 2



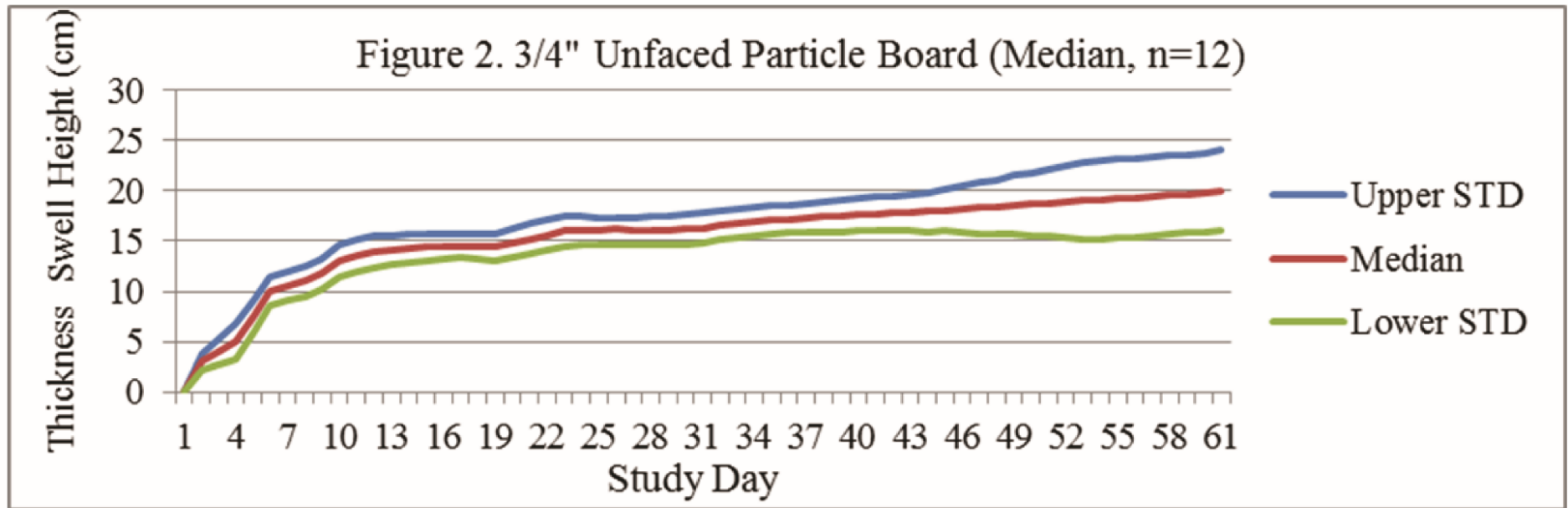
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Questions on Figure 2



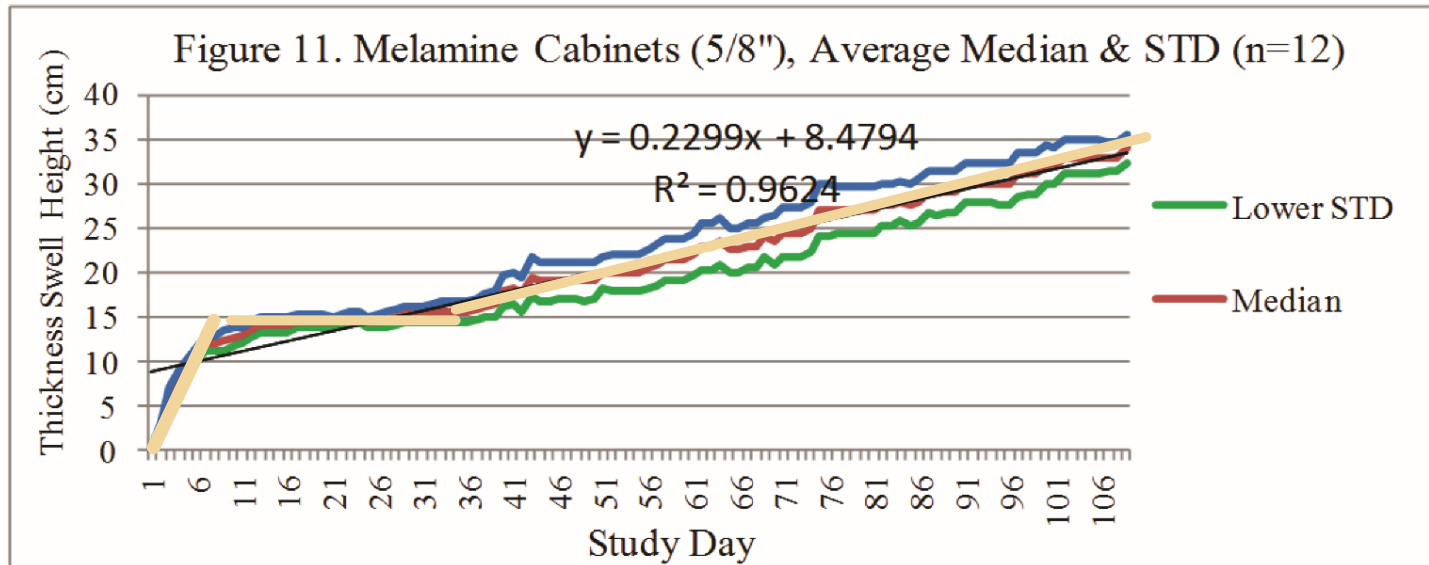
- This is a plot of measurements for a single run experiment. Never repeated. Questions for Moon:
- Is there a reason why the experiment was not repeated? Isn't repeating an experiment a requirement of good science?
- How can we know if potential rate of error is acceptable without determining the extent of measurement error by repeating the experiment? [One cannot!]

Questions on Figure 2



- Measurements were taken at the **center, back and front** of the panel. [But not the sides.]
- Explain exactly how the three different measurements (center, back and front) are used to produce this graph?

Questions on Figure 11



To me it looks like there are three phases to the data in Fig 11.

Phase 1 is the rapid Thickness Swell (TS). Here occurs first 7-8 days.

Phase 2 is an almost flat stage about 9 to 34/35 days.

Phase 3 is then a gradual increase in thickness.

- Based on this graph it is not possible to distinguish based on TS that a water exposure lasted 8 days or 35 days.
- Same thickness swell (TS)!

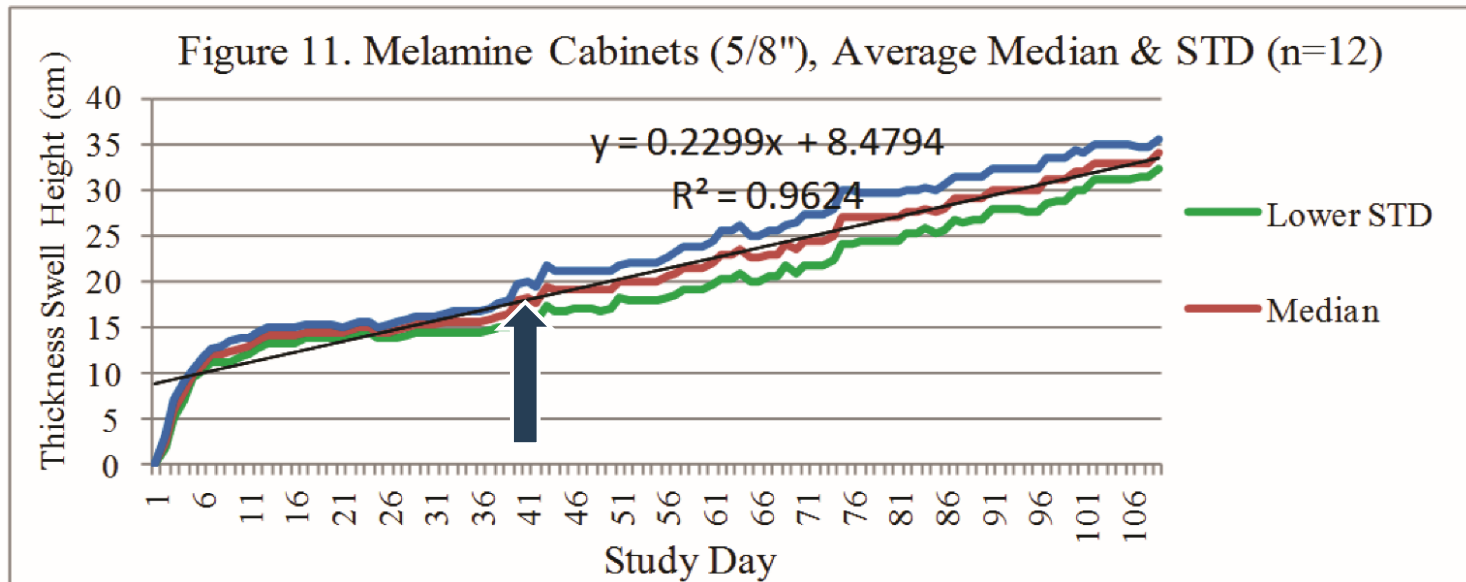
Thickness Swell Not Useful for Dating Leak

Based on the Figure 11 graph, it is **not possible to determine if a water event was before or after 14 days because there is no difference between 8 days or 35 days.**

Dr. Moon needs to explain how this graph is useful for concluding that a water event was more than or less than 14 days.

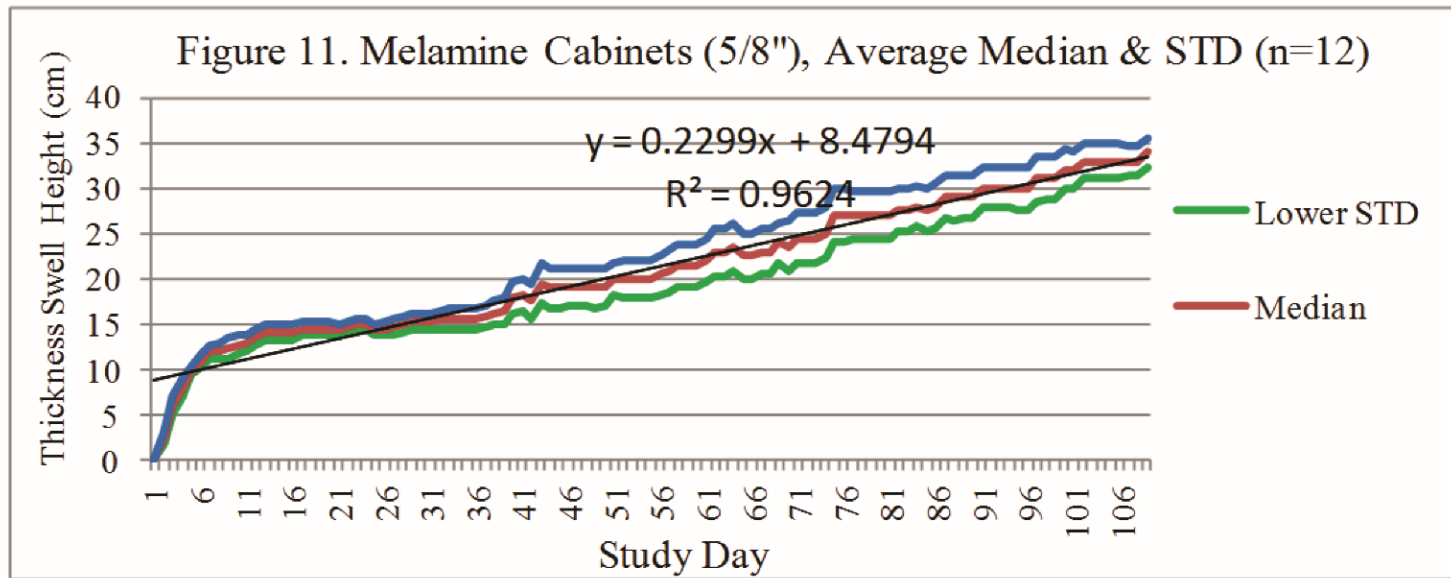
Not possible.

Questions on Figure 11



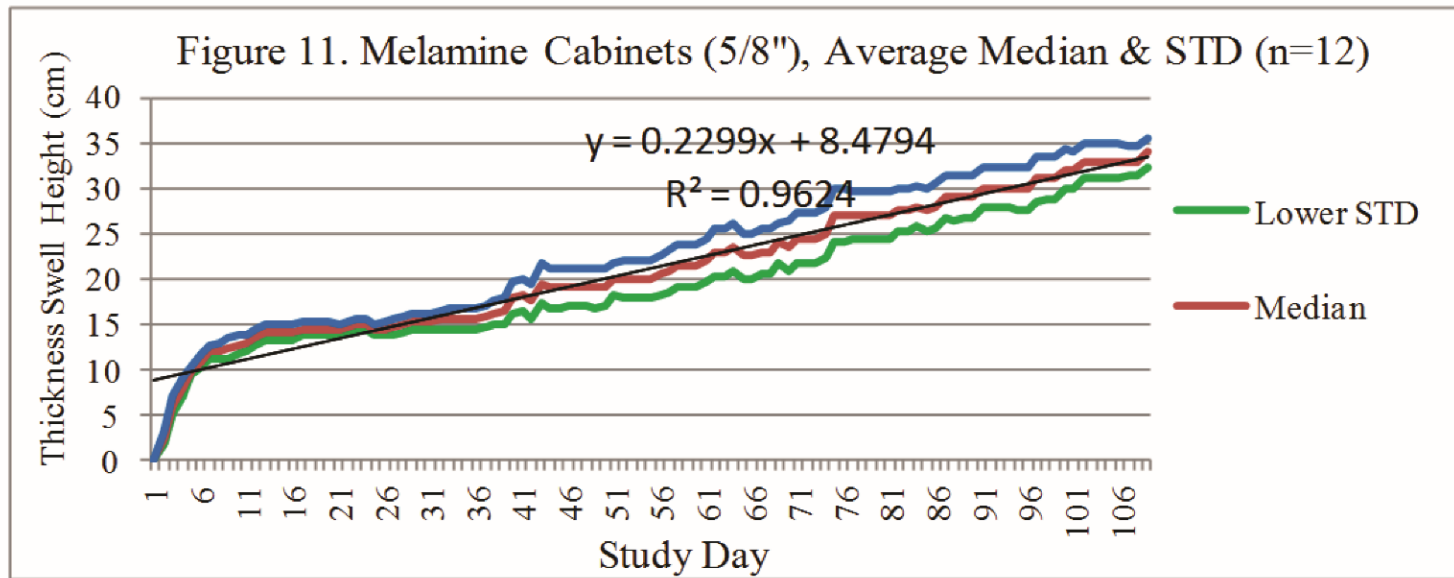
- The straight line that Moon has drawn and the linear equation that Moon has come up with to almost perfectly ($R^2 = 0.9625$) fit the data after day 41, does not in any way describe ALL the data which is quadratic and not linear.
- Who did Moon's regression analysis? The Three Stooges? Please explain.

Questions on Figure 11



- Moon has written that the Y value is 8.4794. This implies accuracy to one ten thousandth of a cm.
- But if you look at the graph the Y value of the chart is zero.
- Have you had any training in experimental science and the theory of error or regression analysis?

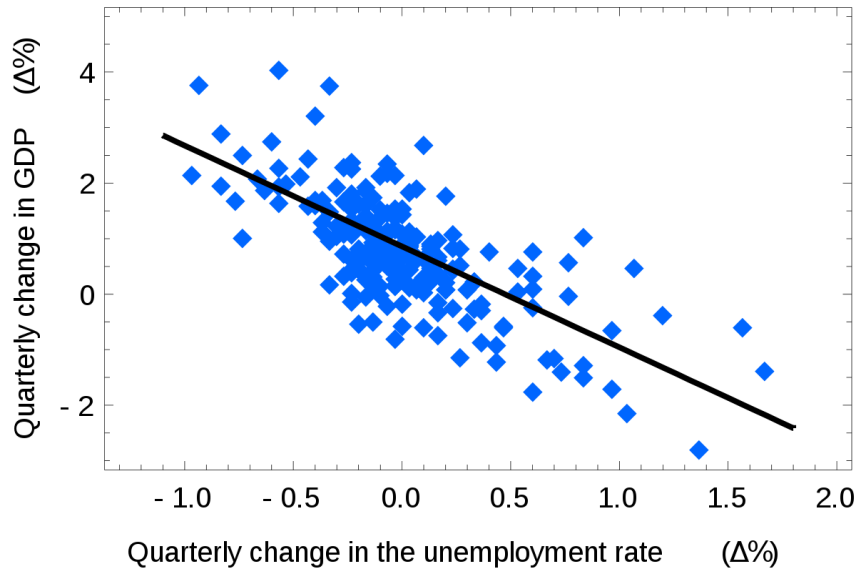
Questions on Figure 11



- Again explain exactly what the use is of this regression line and why you say it is an almost perfect fit of the data?
- Can you please provide the actual data used to calculate $R^2 = 0.9624$ which is an almost perfect correlation between your line and the data. That clearly is in error or some kind of joke perhaps?

Questions on Figure 11

Coefficient of determination



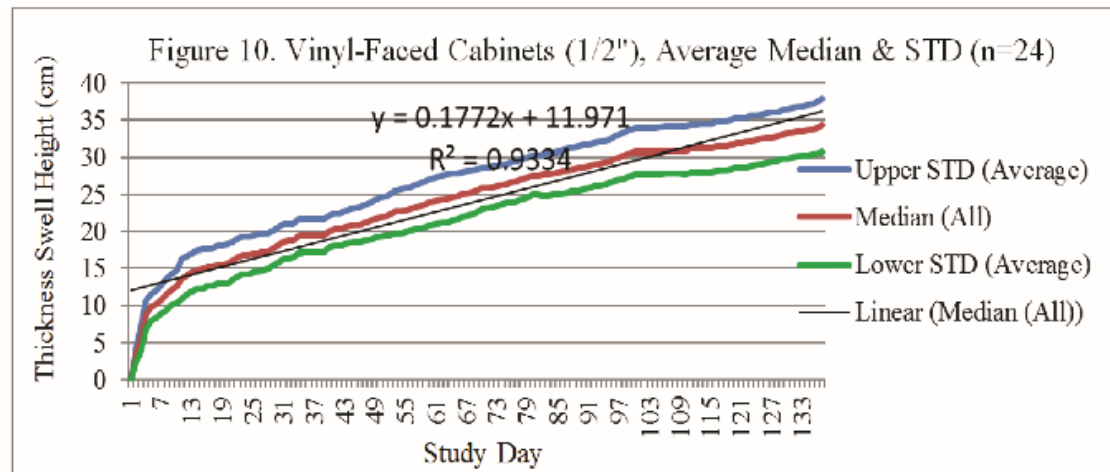
In statistics, the coefficient of determination, denoted R^2 or r^2 and pronounced R squared, is a number that indicates how well data fit a statistical model – something simply a line or a curve. An R^2 of 1 indicates that the regression line perfectly fits the data, while an R^2 of 0 indicates that the line does not fit the data at all.

- $R^2 = 0.9624$ is almost perfect fit of the line to the data. See Wiki discussion on R squared.
- Who performed this analysis which is clearly wrong? Where is the data that was used for the regression analysis?

Questions on Figure 11

Peer-reviewed **moisture absorption** studies published by the American Society of Civil Engineering, Forensic Engineering Congress on particle board cabinet panels revealed that the median thickness swelling height corresponded to extended duration of constant or repeated moisture exposure of 48 days. This estimate was reported within a 95% confidence interval of 39 to 58 days (Davis et al., 2015).

- In other investigations (see above) you state that by some mystical reasoning Figure 11 allows you to claim that everything you conclude about TS has a 95% confidence.
- Please explain how the line drawn through the linear part of the data based on a single experiment gives you the ability to claim 95% confidence in anything but the fit of the line to the linear portion of this particular graph.



Michael Krause, Veritox Inc.



We make a big deal of Moon's [bogus, junk science] regression analysis because this number — 95% confidence — is quoted by Moon in his reports where he denies claims with **95% confidence** based on Davis/Moon 2015.



Which as explained is complete fabrication.
Complete nonsense.

Questions on Davis/Moon page 206

Higher temperatures express higher rates of capillary action. We assumed that the receiving atmosphere following most water losses is also humid (>90% RH) that will minimize evaporative losses. **The temperature regime (77 to 81°F was with in or several degrees above most residential homes.)** The test offered **worst-case conditions that favored the highest achievable moisture absorption and TS rate that error toward faster TS rates.**

- Not true. We are not talking only about air temperature but also water temperature. In Moon's paper Feel The Heat discussed earlier, warm (85 degree) water dramatically accelerates particle board TS so that (and I quote) "swollen appearance was consistent with long term exposure, although exposure was only 30 minutes."
- Who actually wrote the so-called Peer Reviewed Davis/Moon 2015 presentation so full of errors, inconsistencies and outright Fake Science?

Questions on Davis/Moon Conclusion

Conclusions

Particle board panels absorb moisture at predictable rates depending on panel thickness, adhesive, presence or absence of a surfactant and density. TS offers a reliable tool to predict the duration of a water loss when used appropriately **and coupled with other measurements**, facts and observations of the loss. More research will establish moisture absorption and thickness swell among more panel products.

- Moon concludes that TS of particle board offers a reliable tool to predict the duration of a water loss ...
- When **coupled with other measurements**, facts, and observations.
- **Doesn't this mean not reliable as a stand along tool?**

Questions on Davis/Moon Conclusion

The test results revealed that some circumstances offer a reliable technique to estimate the duration of a one time, continuous water loss when combined with other facts and observations.

- Moon concludes that TS offers a reliable tool to predict the duration of a water loss ...
- But you state that it is **only reliable in some circumstances.**
- Doesn't this mean not reliable under ... which circumstances? Which ones reliable?

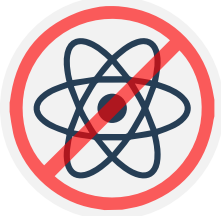


FINAL
THOUGHTS

FINAL THOUGHTS



JUNK or FAKE?



“Junk Science”

Junk science is faulty scientific data and analysis used to advance special interests and hidden agendas.



Actually junk science could be the result of mistakes or lack of knowledge.



What we have here is actually Fake Science. Which is pseudo-science that is meant to deceive.

Directed Conclusion

- Directed conclusion. Carrier hires expert to “find” the evidence to deny claim/ to erect barrier. Home owner no money. Carrier has the money. (It’s the home owner’s money).
- Home owner often desperate and settles for pennies on the dollar.
- So long as the cost of the defense expert is less than the cost of paying the claim, the carrier wins.
- This is simply business for the Carrier even when claim denial is not justified or “justified” with a phony/ junk science analysis
- Dozens of so called Forensic Engineering firms making \$\$ millions putting out Fake Science reports so that what... Carriers keep Homeowner’s money!

True. Sometimes Valid.

- **True the Coverage Denial is Sometimes valid.** But often times Expert analysis is completely bogus and just rubber stamping carrier directive to “find evidence” to deny the claim.
- As we have seen here this can mean making up evidence albeit in a crafty and/or tricky way.



Befuddle Juries

- **“Befuddled Juries”** are confounded by absurd and irrational pseudoscientific assertions.
- The Supreme Court attempted to elucidate some standards in *Daubert v. Merrell Dow Pharmaceuticals* (1993) and two subsequent cases, which govern the admissibility of scientific evidence. **The court ruled that evidence must be generally accepted in the field and open to empirical testing.**



Court Ruling

- The court ruled that evidence must be **generally accepted** in the field and **open to empirical testing**.



Are any of Moon's results generally accepted?
No.



Reproduced by others? Or repeated by Dr. Moon?
No. No.



Provide actual data used to plot the charts that would enable one to validate their graphs and conclusions.
No.

Tricks They Play

Tricks they play include

- Misdirection/ misapplication/ misinterpretation.
- Manipulation of data and information
- Falsehoods
- Red Herring ([disambiguation](#)). The red herring is a seemingly plausible, though ultimately irrelevant, diversionary tactic.
- A Chewbacca defense is the name given to a legal strategy in which the aim of the argument seems to be to deliberately confuse the jury rather than to factually refute the case of the other side.
- Overwhelm/Bury with irrelevant details
- Impress/Overwhelm with inexplicable scientific looking charts graphs and/or equations.



Tricks They Play



Tricks they play include

- Logical fallacy in which a clue or piece of information is or is intended to be misleading, or distracting from the actual question.
- Faulty forensics/ Forensic pseudoscience
- Subjective conclusions
- Posing as experts in nonapplicable fields
- Impenetrable / obtuse arguments
- Charted/graphed data without showing actual data so no one can reproduce.
- Idealizing charted data. Not showing confidence limits.
- Based on limited and/ or not reliable data
- Low degree of correspondence
- Bad practices
- High margin of error

Federal Rule 702

- RULE 702. TESTIMONY BY EXPERT WITNESSES
- A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise [ONLY] if:
 - a) The expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue. **If NOT disqualify the expert.**
- EXPERT may testify in the form of an opinion or otherwise if:
 - b) The testimony is based on sufficient facts or data. **If NOT disqualify the expert.**
 - c) The testimony is the product of reliable principles and methods. **If NOT disqualify the expert.**
 - d) The expert has reliably applied the principles and methods to the facts of the case. **If NOT disqualify the expert.**

But No Joke



People are living in sick homes or homes with no kitchens or bathrooms because ruthless Insurance Carriers play these types of games.



The ONLY way to stop ruthless Insurance Carriers is to disqualify their so-called Experts.



When in doubt ... throw them out!



Conclusion

And they say we don't need AOB's with Attorney Fee Provisions to protect Home Owners and Contractors from Bogus Denials and Insurance Carrier BAD FAITH!

- Seriously folks. If I ever gave a presentation (Davis/Moon 2015) whose conclusion so misrepresented the facts I would consider Seppuku.
- Ritual disembowelment.





Appendix

Editors of Forensic Engineering 2015 Oral Presentations

Review Editors

Reviewers listed for Forensic Engineer Conference 2015

Jason Andrew; Kimball J. Beasley; Paul A. Bosela; Kenneth L. Carper; John Cleary;
James Cohen; Julie Mark Cohen; Benjamin Cornelius; Norbert Delatte; Lawrence
Dombrowski, Jr.; Ibrahim Erdem; Eve Hinman; Nicholas Hyatt; Susan Lyons;
Shalva Marjanishvili; Robert McGraw; Paul F. Mlakar; **Ralph Moon**; Carmen
Mulea; Sean O'Brien; Ilias Ortega; M. Kevin Parfitt; David B. Peraza; Rahul
Ratakonda; Robert T. Ratay; Oswald Rendon-Herrero; Ziad Salameh; Lloyd M.
Sonenthal; Laura Sullivan-Green; Glenn G. Thater; Stewart Verhuls

