

# INSPECTOR BEWARE...



**All systems are not created equal!**

# T. Dean Moody II



- **President of BIBCA, Platinum member**  
*network of 165 'best of the best' contractors*
- **Board-certified attorney in the state of WA**
- **Local Chamber of Commerce board member**
- **Owner of Intermountain West Insulation**
- **Married with 4 kids and 1 dog**



## Bait and Switch



**...is a form of fraud used in sales where customers are “baited” by merchants advertising goods or services at a low price, then customers discover the advertised goods are not available. Other more costly products are then substituted.**

# Too late for buyer's remorse!



# Chinese drywall



**Three years ago, Colleen Stephens moved her family from their a 5,000 square-foot, newly-remodeled home overlooking Virginia Beach into a home half the size and further inland.**

**Why??**

**Her home was**

**sheetrocked**

**With drywall imported**

**From China**



# Chinese Drywall



**Soon after this knock-off drywall was installed, many homeowners complained of health problems, including headaches, respiratory ailments, and skin and eye irritation. They noticed a sulfurous smell. In addition, appliances like televisions and microwaves failed, and silver and copper items were covered in black soot.**



# What did using cheap drywall cost??

**According to the plaintiffs' attorneys, 7,000-10,000 homes were damaged because of the defective Chinese drywall installed in the Southern building boom after Hurricanes Rita and Katrina. The drywall was plentiful and very cheap.**



**“I would have rather lived in a tent..”**



**“Our other  
house reeked  
And  
made us all  
Sick.”**



**This is the smaller house she moved into**

***Article from the New York Times***



# Chinese-manf Drywall Products Liability Litigation



**To date, Colleen and her family have not received one cent in compensation. Suing a foreign corporation is very difficult.**



# What is this???



# Other construction issues (EIFS)



**Exterior insulation finishing system**

**Brought on to replace stucco**

**Installed by many unskilled laborers**

**Resulted in huge water intrusion cases**

**Largest case: San Martin, CA courthouse  
\$12 million settlement**



# Insulation Systems

Fiberglass batts

Cellulose

Spray foam

# Fiberglass batts



# What about Batts?



## Batts

- Manufactured to precise sizes in a factory
- Harder to install in non-conforming spaces
  - Takes longer
  - Doesn't fit perfectly
  - Often compressed or has voids
- Harder to get good fit around wires, pipes, obstructions
- Lower fiber density, lower R-values



# Cellulose



## A blown-in product



# Polyurethane Foam Spray



**Closed-cell foam**

**Open-cell foam**







**Blow-In-Blanket® System and BIBS®  
are registered trademarks of  
Blow-In-Blanket, LLC**

# Our Brand



# Terms and Concepts

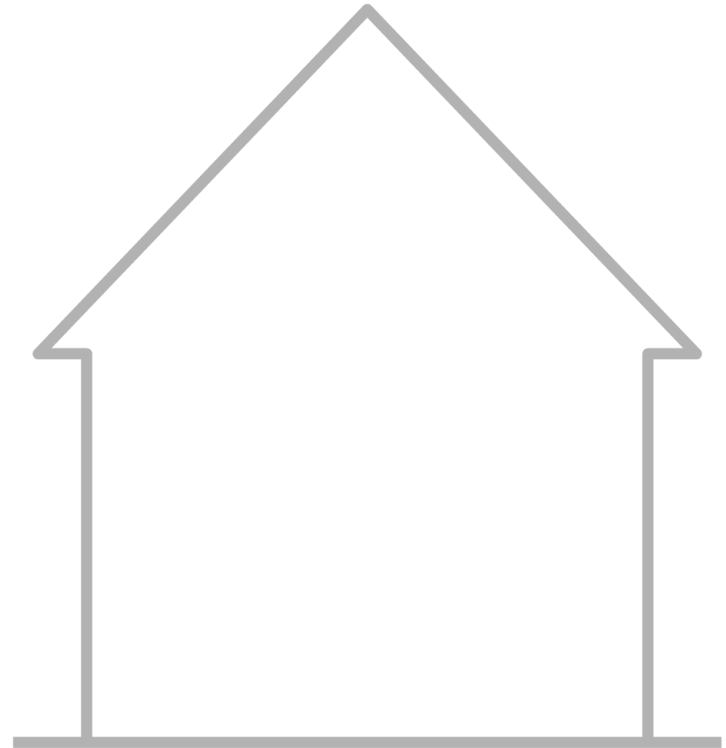
Building Science & Insulation

# Each Building is a System!



- Should work as a system, by design
- Construction methods/products impact the system

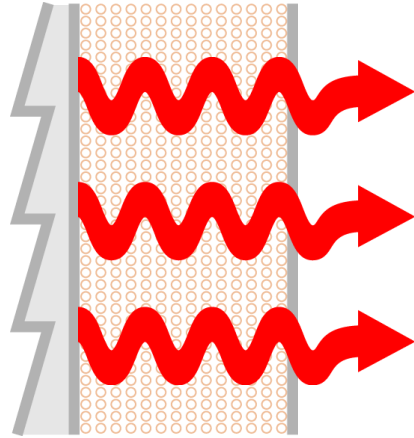
The health and comfort of the occupants depends on how well that system works!



# What affects our Homes??



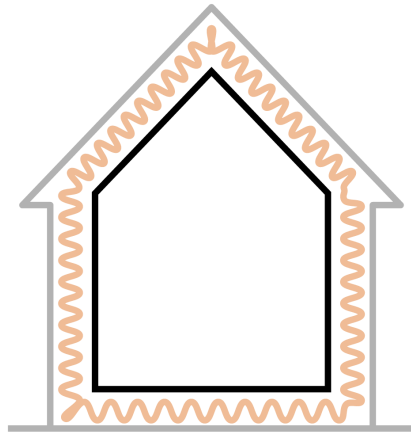
Heat  
Transfer



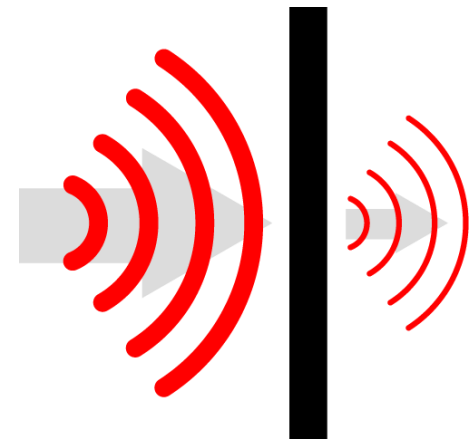
Moisture



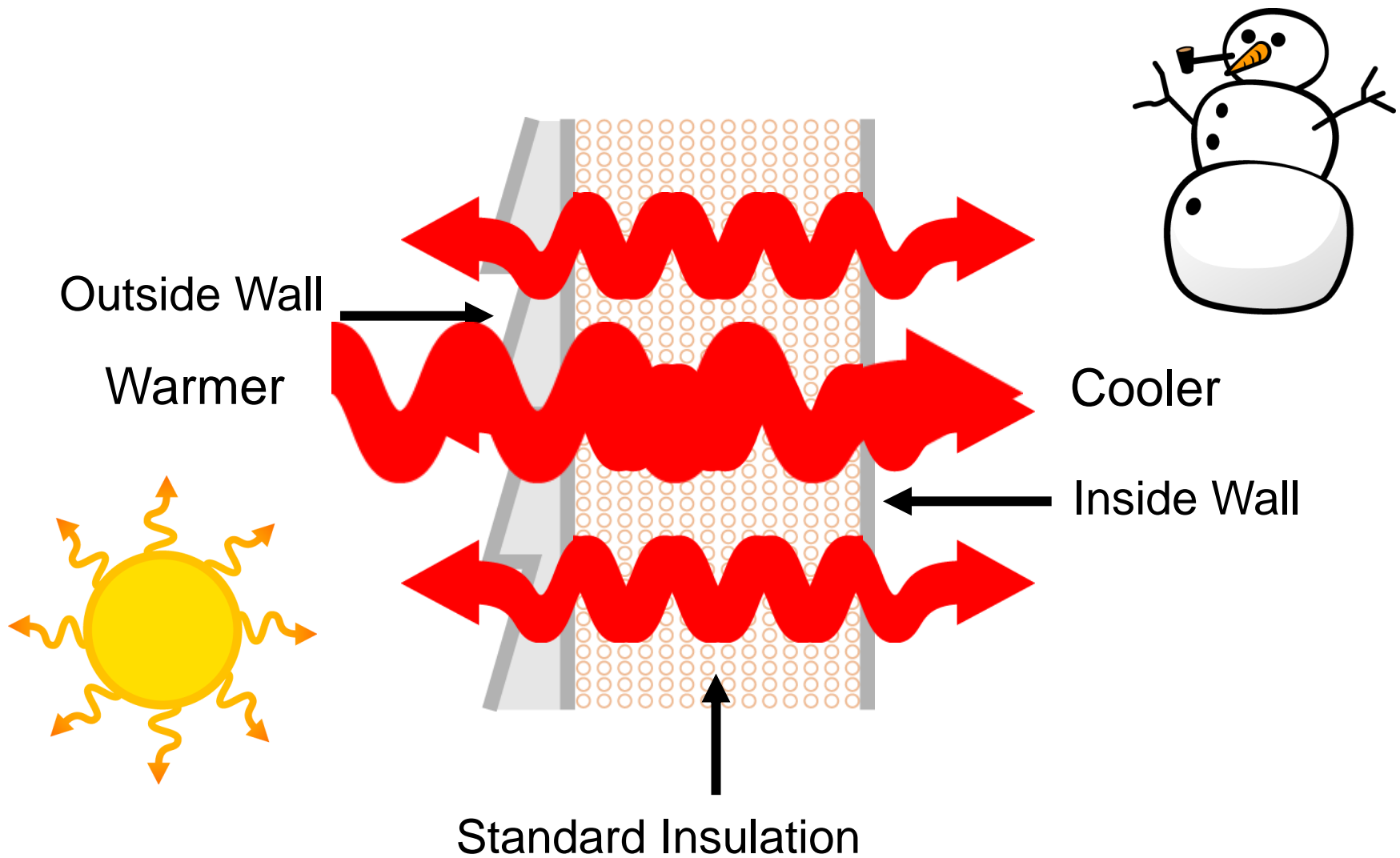
Thermal  
Envelope



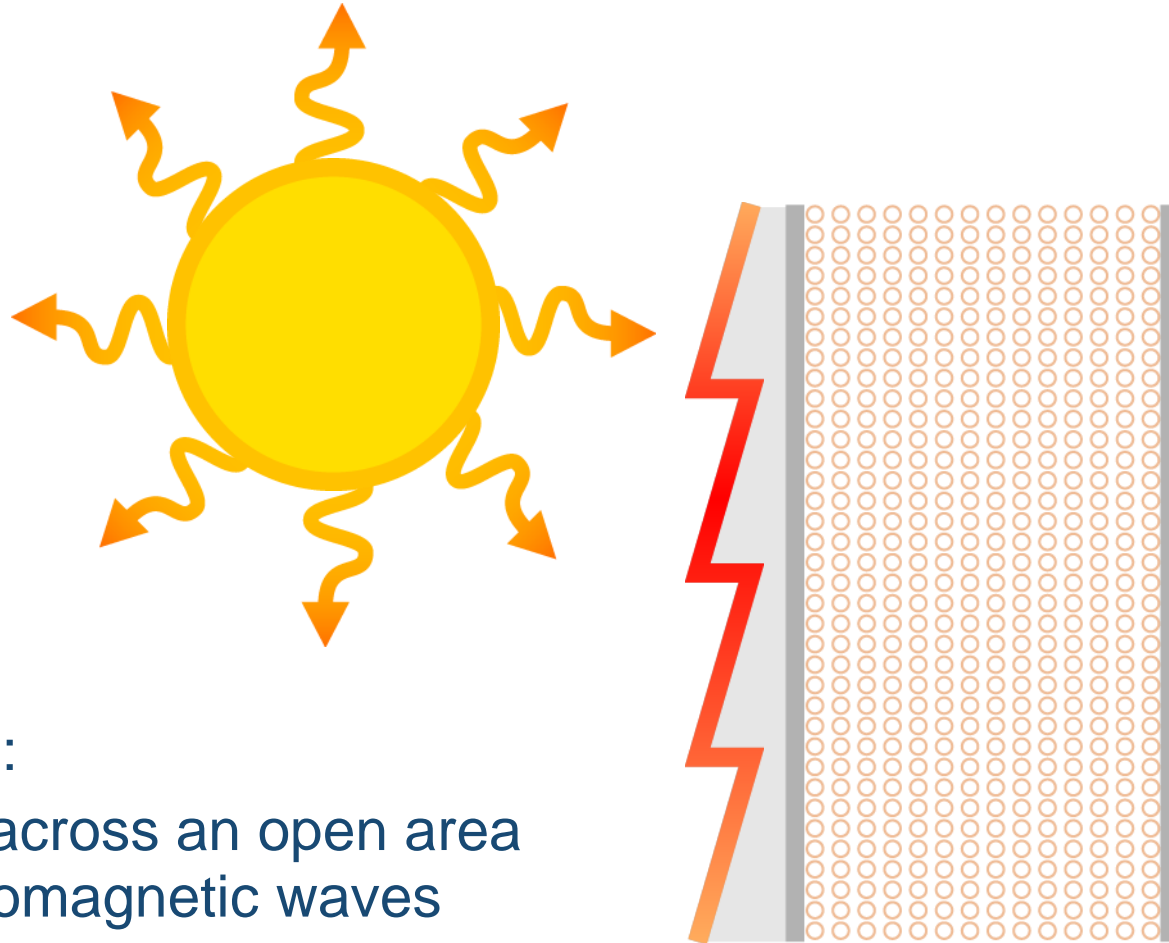
Sound  
Control



# Heat Transfer



# Radiation



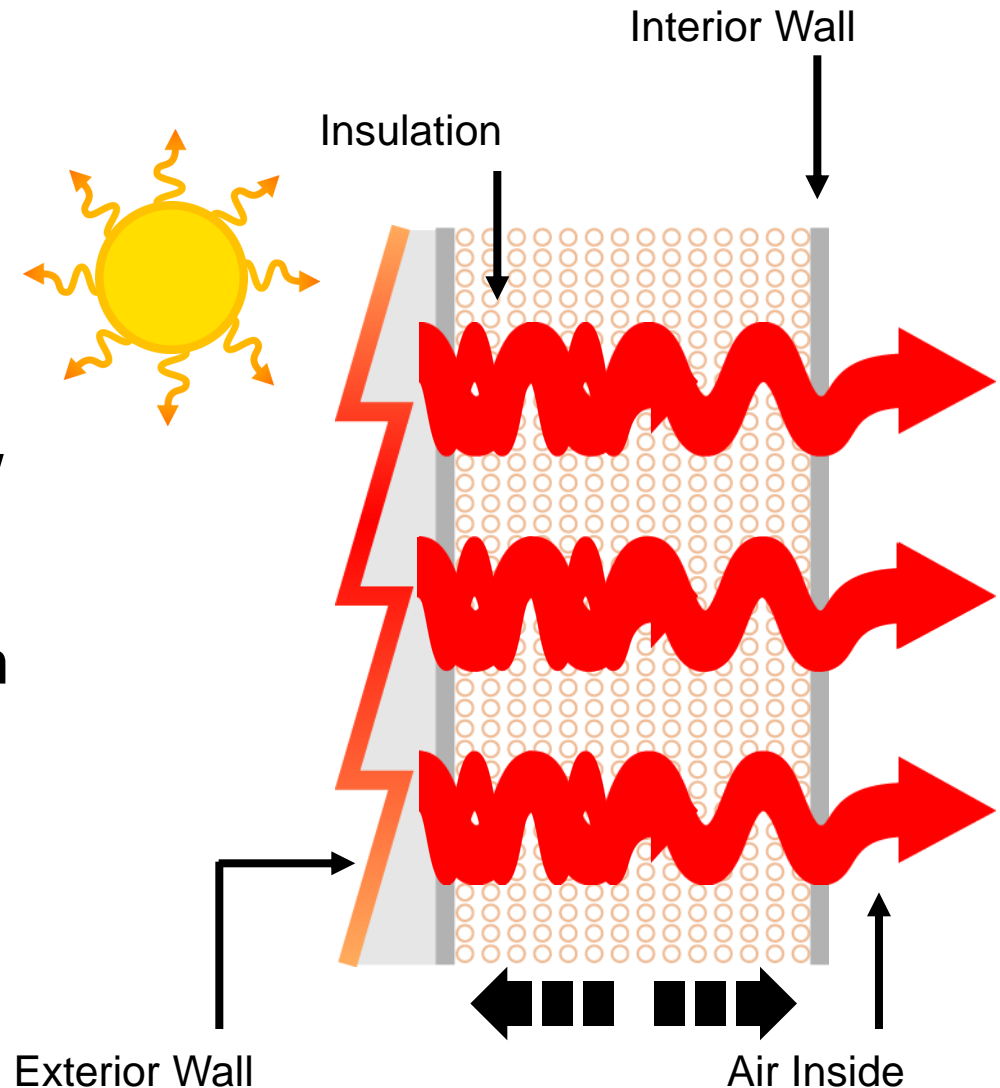
Radiation:  
Transfer across an open area  
via electromagnetic waves

# Conduction



**Conduction:**  
Transfer by  
direct contact

- Thermal conductivity
- Good insulators have **low thermal conductivity**
- Poor insulators have **high thermal conductivity**
- Thickness of insulation material



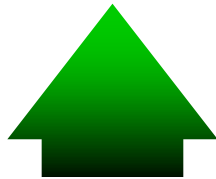


# Conductivity and R-Value



- Good insulators **RESIST** thermal conductivity
- R-Value = Resistance Value

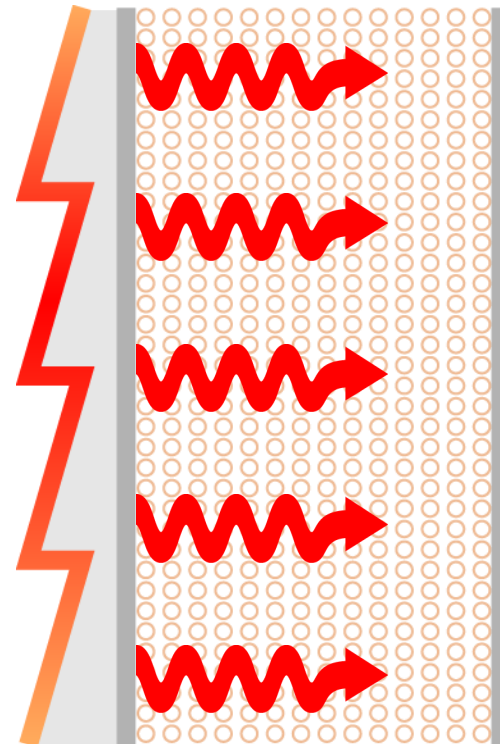
Better Insulator



R-Value



Poorer Insulator



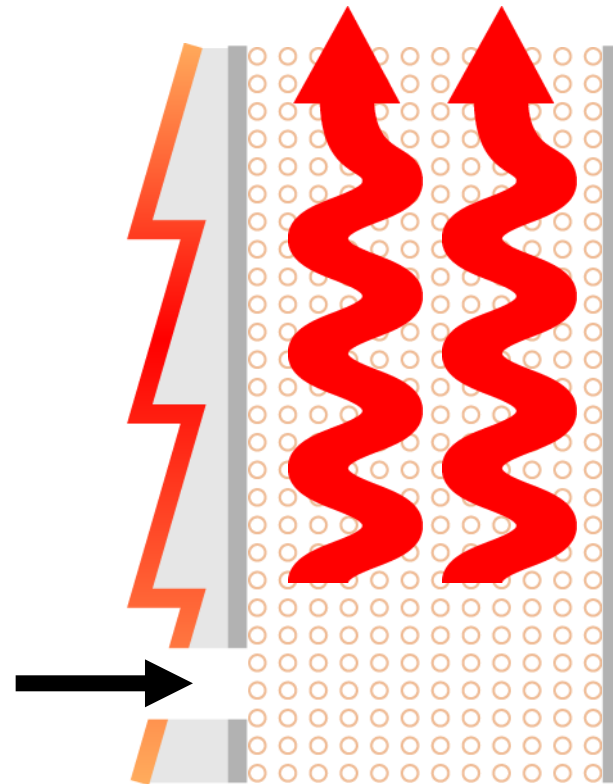
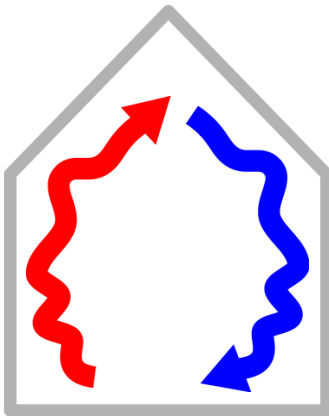
# Convection



## Convection:

Transfer via movement of currents in a fluid

- Air is a fluid!
- Warm air rises, and displaces cooler air downward



# Poor Installation = Lower R-Value

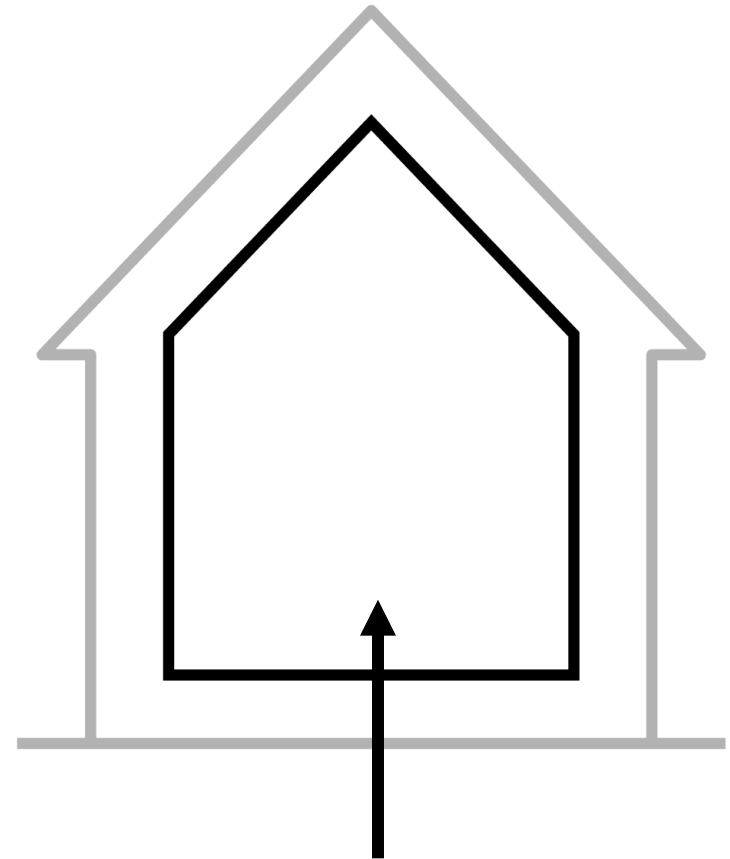


**A poorly installed batt leads to convection currents.  
The net effect is a lower R-value.**

# The Thermal Envelope



- Major components:
  - Walls
  - Ceilings
  - Floors
- Also includes:
  - Windows and doors
  - Chimneys, flue pipes, etc.

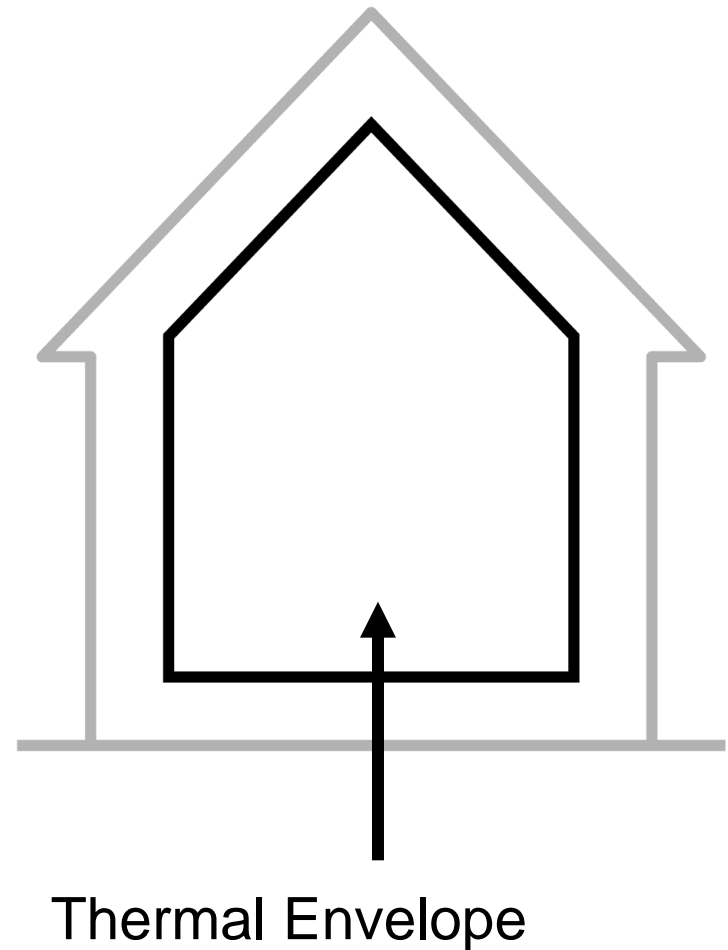


Thermal Envelope

# Impact on HVAC



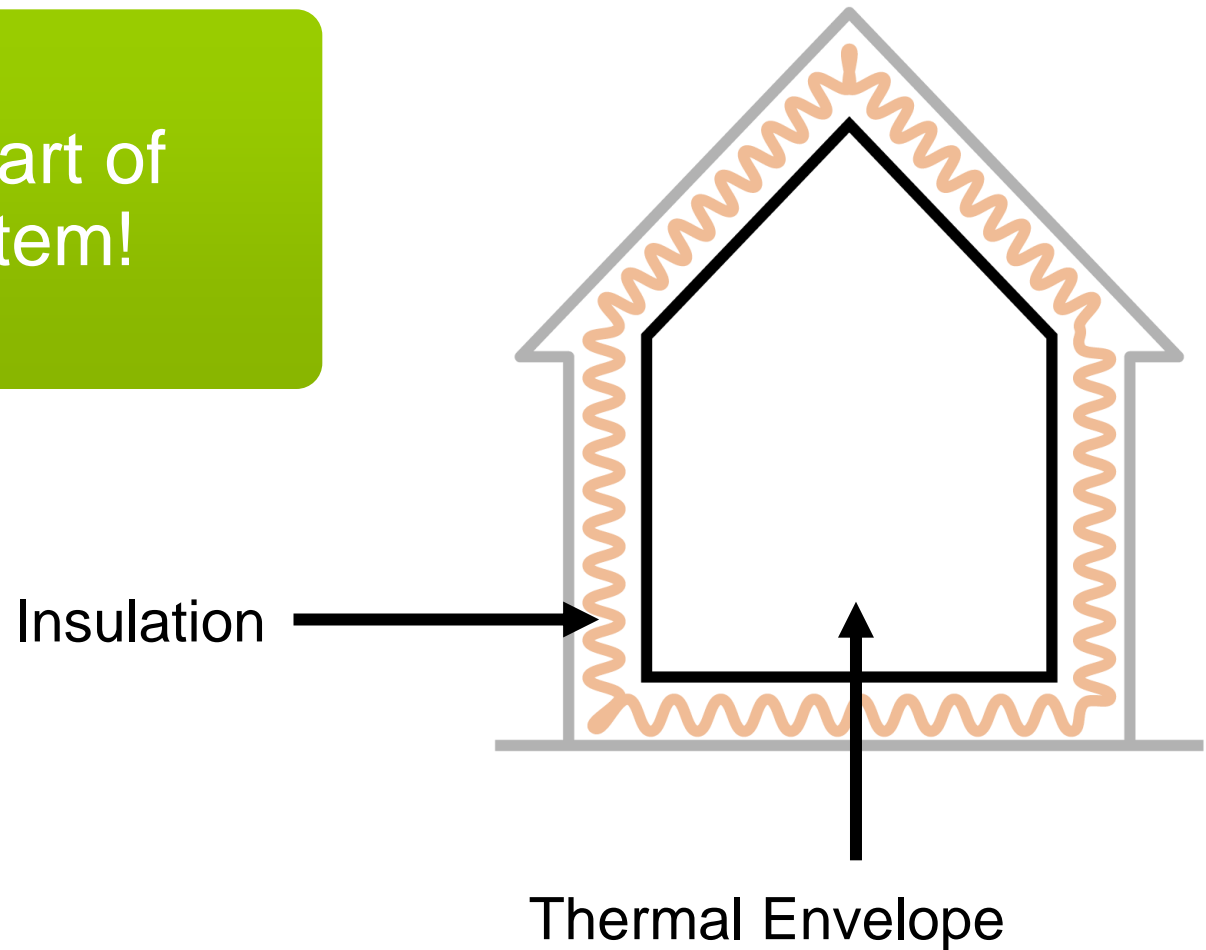
- Insulation system directly affects the efficiency of the HVAC and other building systems
- If the HVAC is correctly-sized, but the insulation is specified or installed poorly, the building will be uncomfortable and costly to heat and cool



# Insulate the Envelope



It's all part of the system!

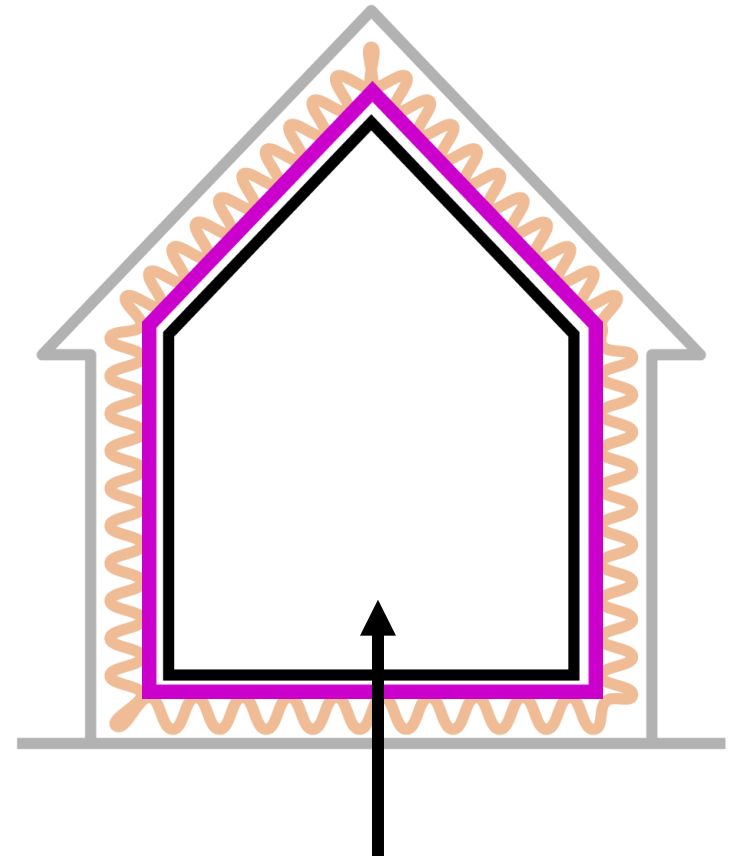


# Air Quality and Ventilation



- New construction techniques can reduce ventilation and degrade air quality
- Requires systems to provide ventilation and control air infiltration/exhaust

It all needs to be part of the system design



Thermal Envelope

# Sound Transmission



- Insulating the space between the rooms attenuates (reduces) sound transmission
- Most effective for airborne transmission at medium to higher frequencies (normal speaking range)
- Some insulation systems are better than others!

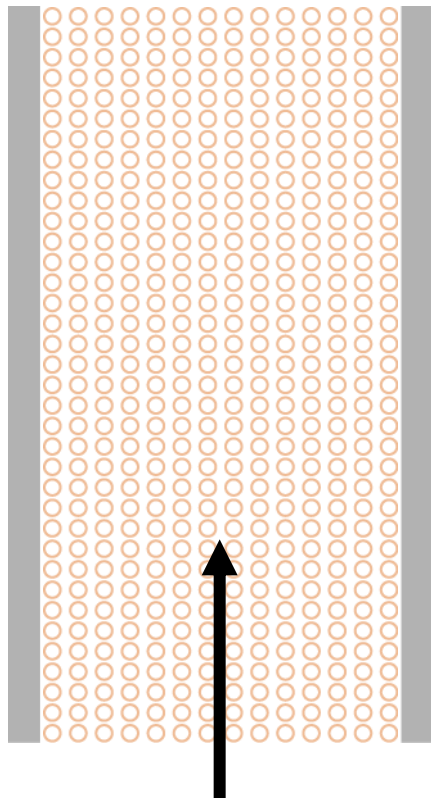




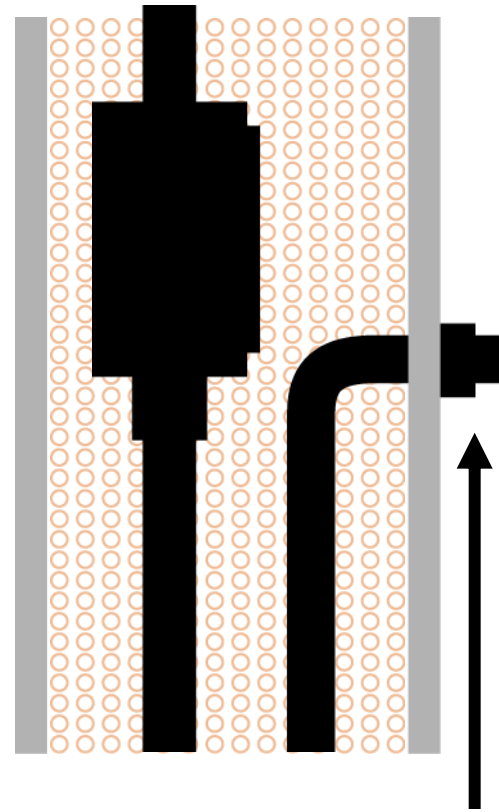
# Problem Areas



**Sound is transmitted through:**



Air Gaps



Penetrations

## Sound Transmission Class (STC)

- A single number rating based on sound transmission loss measurement of a partition between adjacent closed rooms
- Incorporates entire range of frequencies people can hear (500 – 2,000 Hz)

## Transmission Loss (TL)

- Measures the sound performance of a wall at one specific sound frequency (in decibels)

Better  
Sound Control



STC and TL

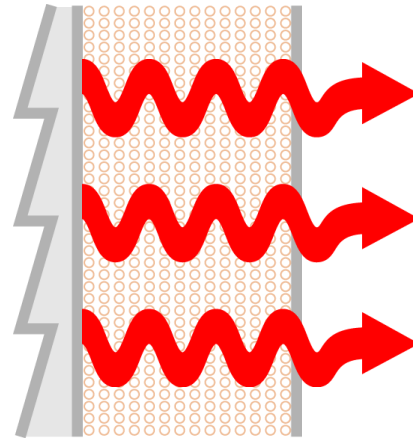


Poorer  
Sound Control

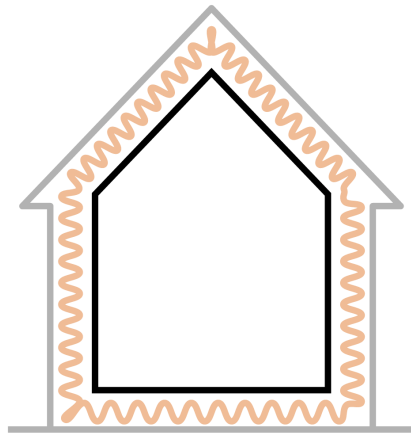
# Summary



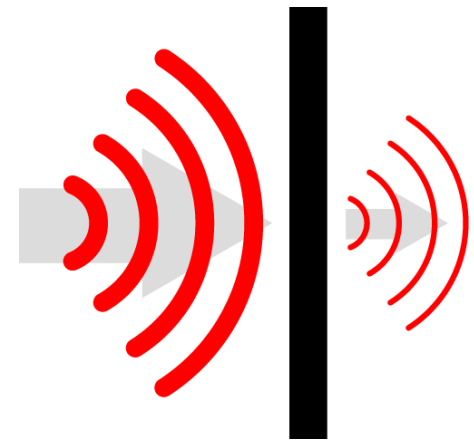
Heat  
Transfer



Thermal  
Envelope



Sound  
Control



# BIBS Solves these issues

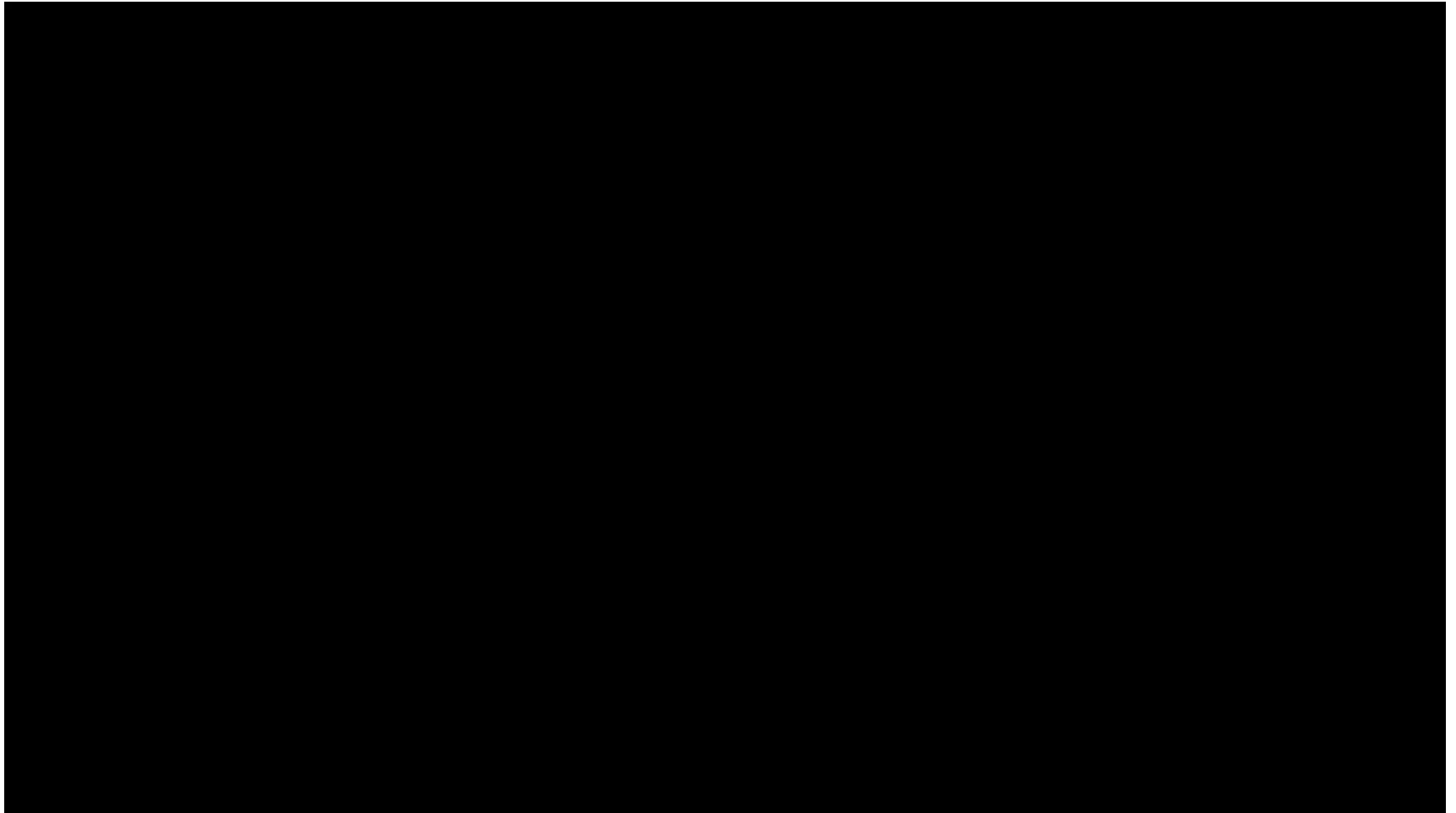


## 1. BIBS<sup>®</sup> Basics

## 2. How is this installed?

- Net
- Staples
- Fiberglass
- Vapor Barrier

# Installation Overview



# You Get a LOT of Questions!



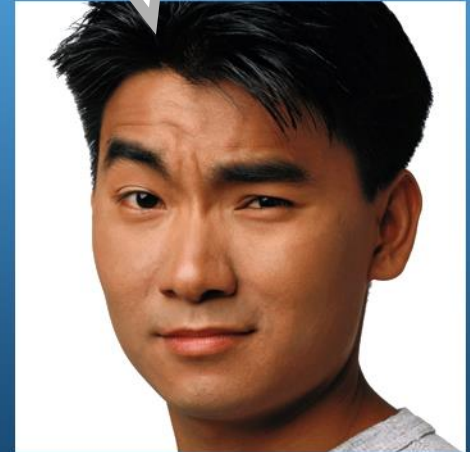
Insulation is insulation!  
What's different about  
BIBS®?



Where are we  
losing heat?  
And why?



What do "Perm"  
and "STC" ratings  
mean?  
And why should  
I care?



# Problems with Insulation



## Not All Insulation is Created Equal

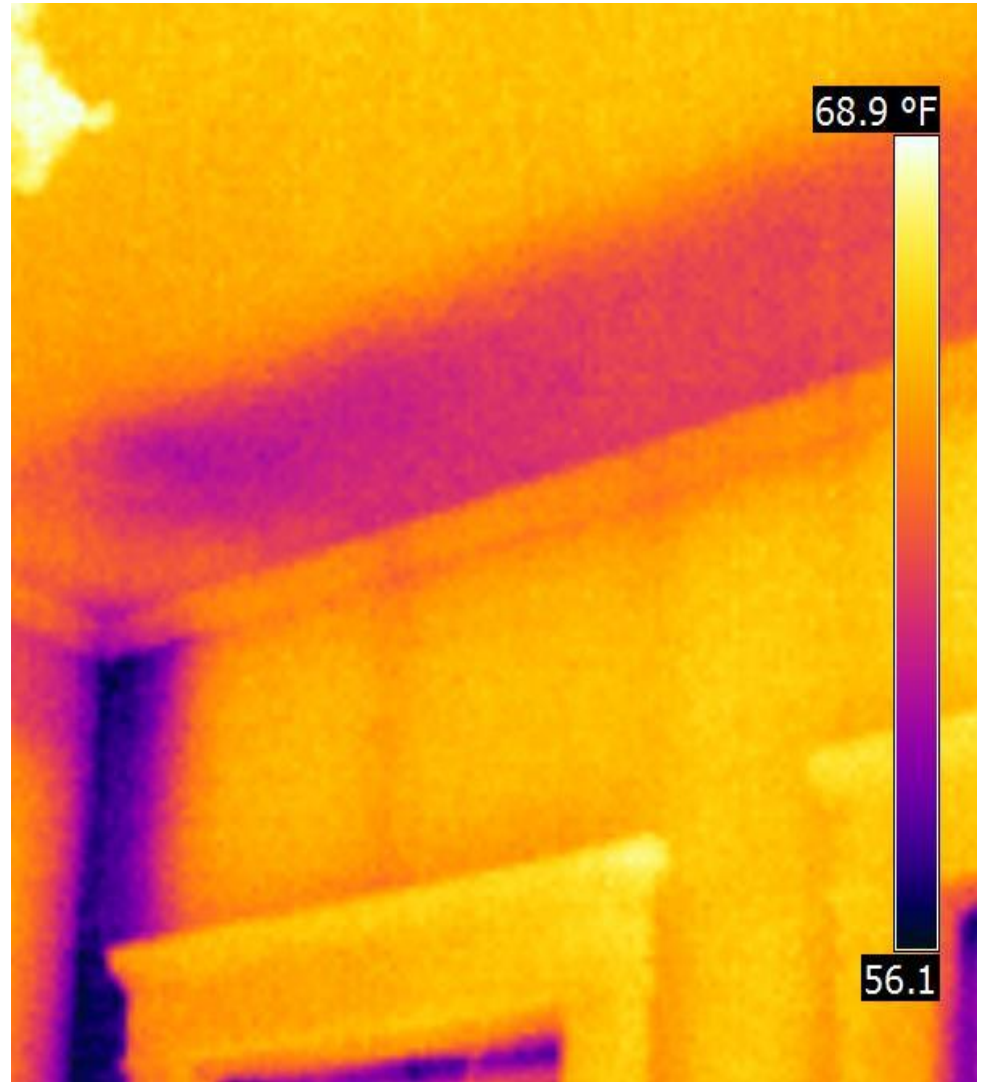
- Batts are only as good as the installer



# Infrared Guns are Batts' worst Nightmare



**An x-ray of your House will show every deficiency!**





# Gaps Equals Energy Loss



**Like money flying out of a window..**



# Blower Door Tests Find these weak spots

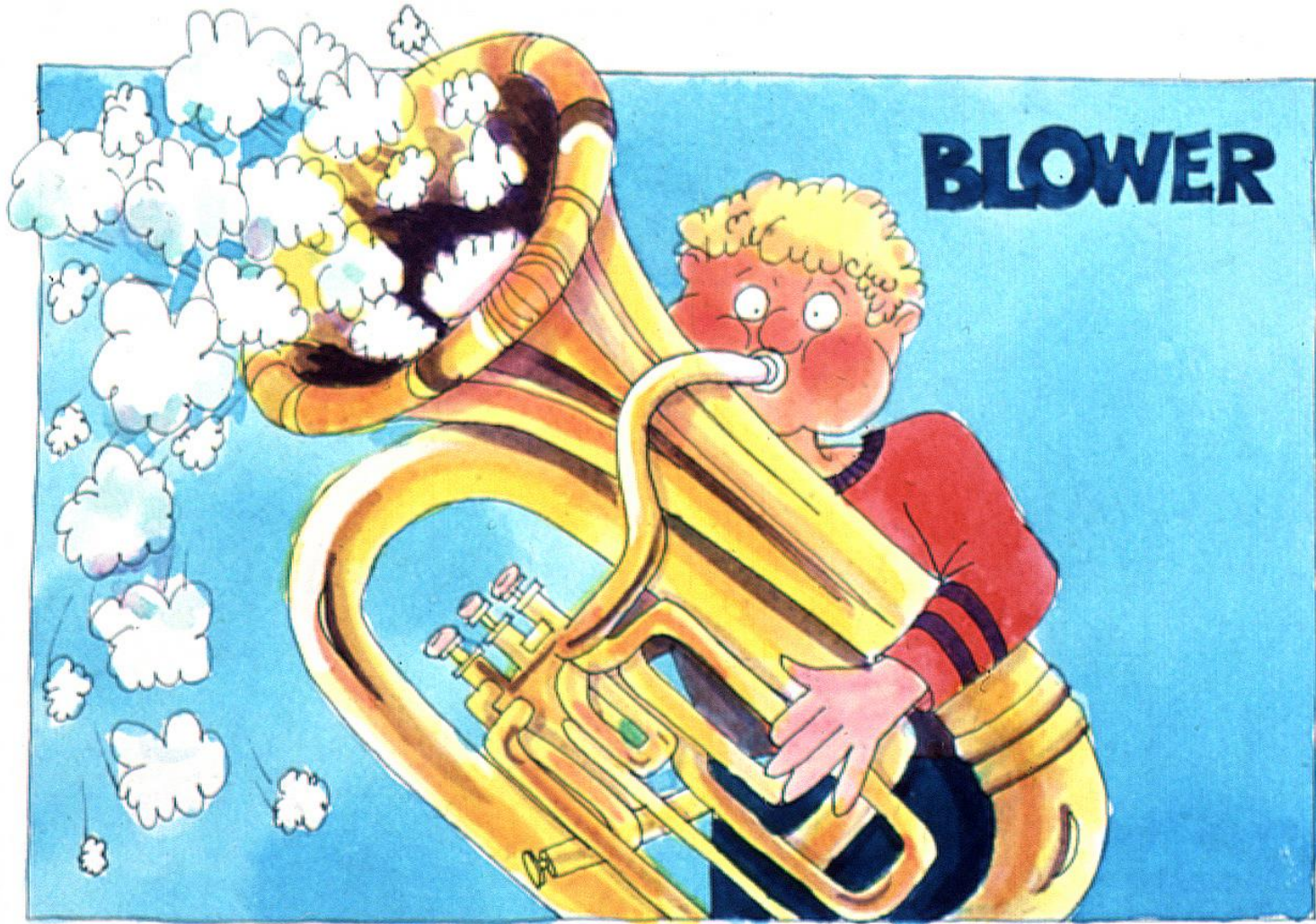


**Required under some building codes for new construction**



# Why BIBS®?

What does this system offer and why do I need to know anything about it?



# BIBS Solves Issues Batts Can't



- **After netting, BIBS is blown into the wall at correct density**
- **Fills every gap & space**
- **Consistent, uniform R-Value**
- **Gets around wires, boxes, and pipes**

# BIBS® Advantages



## Properly installed, BIBS®:

- Eliminates voids and gaps
- Does not settle
- Reduces air infiltration
- Provides highest R-values in the industry



# Perfect Fit!



## Up to 60% of stud spaces are non-standard!

- Greater than or less than 16” or 24” on-center
- Wires, pipes, electrical boxes in cavities
- Curves, angles, unusual spaces



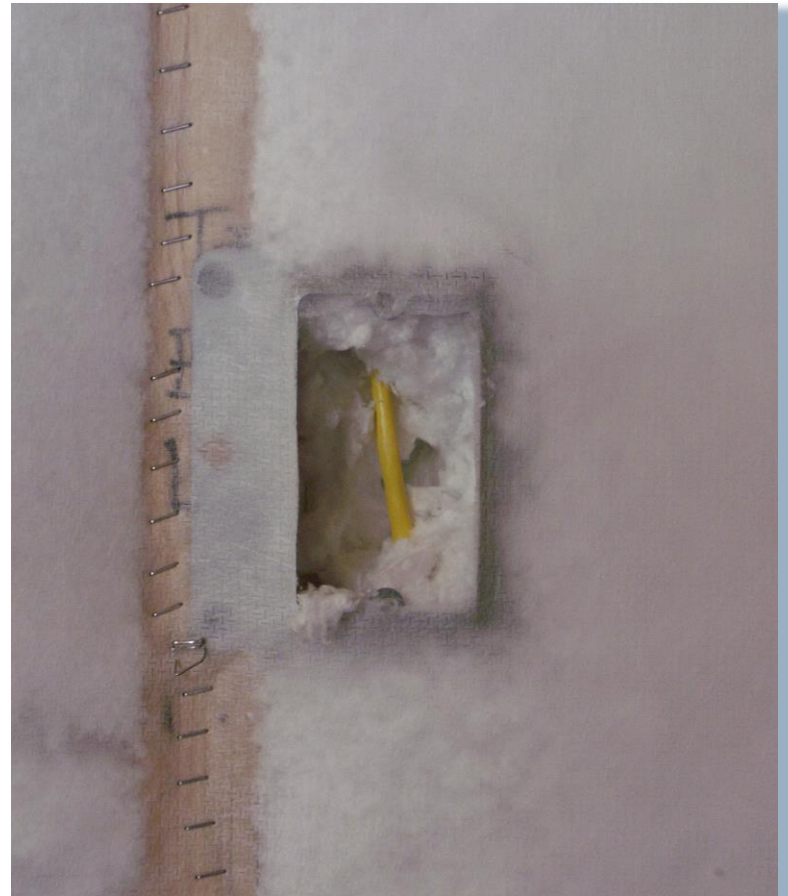
BIBS<sup>®</sup> is the Perfect Fit

# Fits any Configuration



## Excellent, custom fit for:

- Standard framed walls
- Vaulted ceilings
- Custom windows
- Arches and other curved spaces
- Crawl spaces and cavities

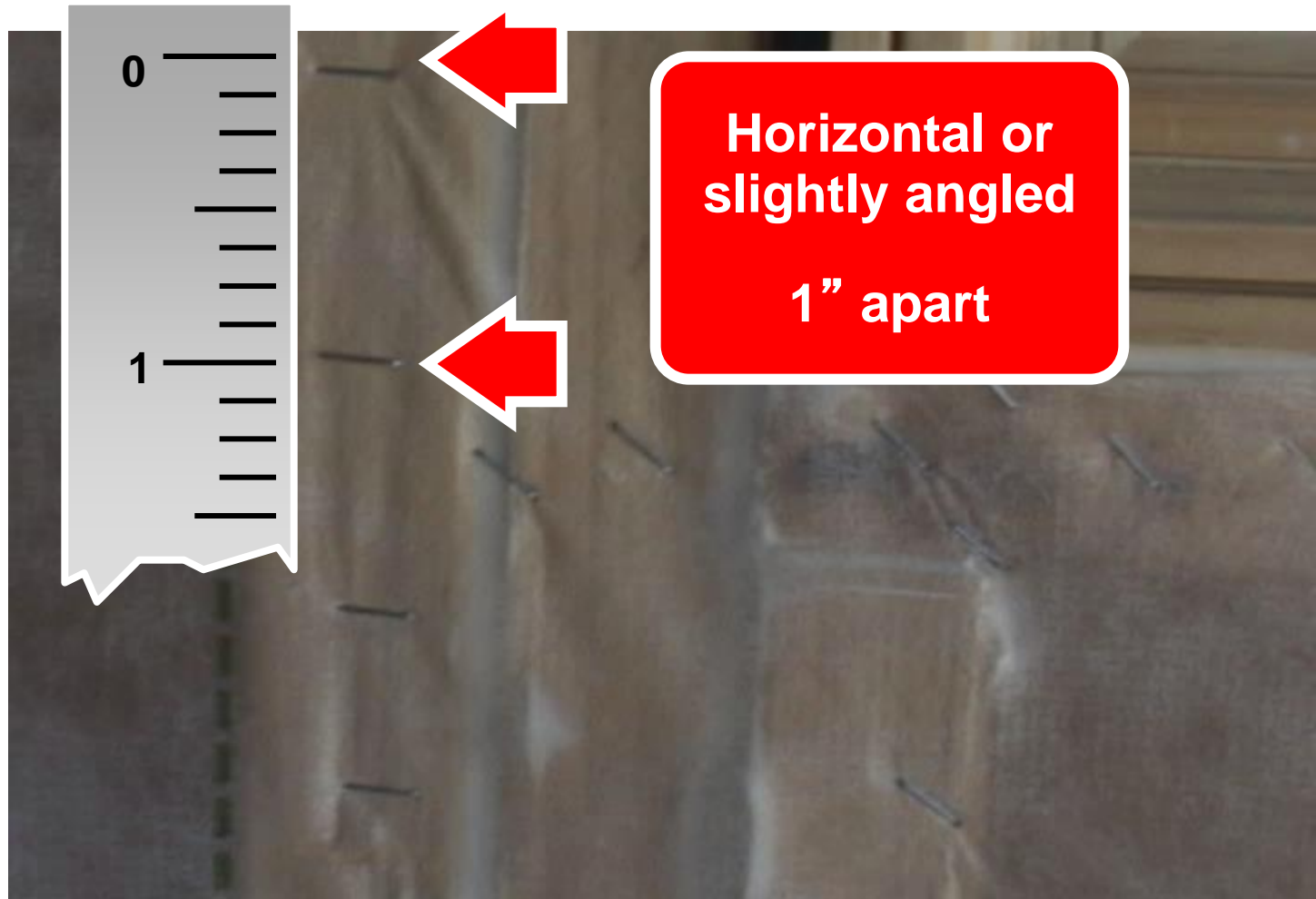




# What to look for in the fabric:



# Spacing the Staples



# Blowing



**Move nozzle  
back and forth  
Withdraw slowly**

**Fill in  
behind and  
under  
obstructions**

# Goal



**No voids or “light fill” areas**

**Uniform appearance**

**Not too much bulge**

**No lumps or “rats”**

# R-Values: BIBS® vs Batts

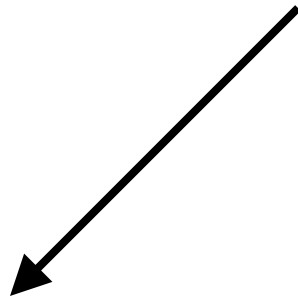


Construction	BIBS®	Batts
2x4 (3 1/2")	R-15	R-11
2x6 (5 1/2")	R-23 (24)*	R-19 (17.4)
2x8 (7 1/4")	R-30	R-19
2x10 (9 1/4")	R-38	R-25
2x12 (11 1/4")	R-47	R-30

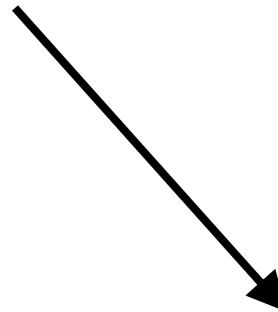
\* references Knauf MAX fiber to achieve R-25 in Canada, not available in the USA.



# **Thermal Testing**



**R-Value**



**Bag Weight  
Requirements**

# Better by Design



## **BIBS® is designed to provide:**

- Superior thermal, and air infiltration protection
- Fit for any configuration
  - Cavities, curves, vaulted ceilings, crawl spaces, custom windows, etc.
- Safe materials that are moisture-resistant, fire-resistant, chemical-free and environmentally responsible
- Outstanding exterior and interior sound control
- Clean, dust-free installation

Installed by trained  
and certified  
professionals





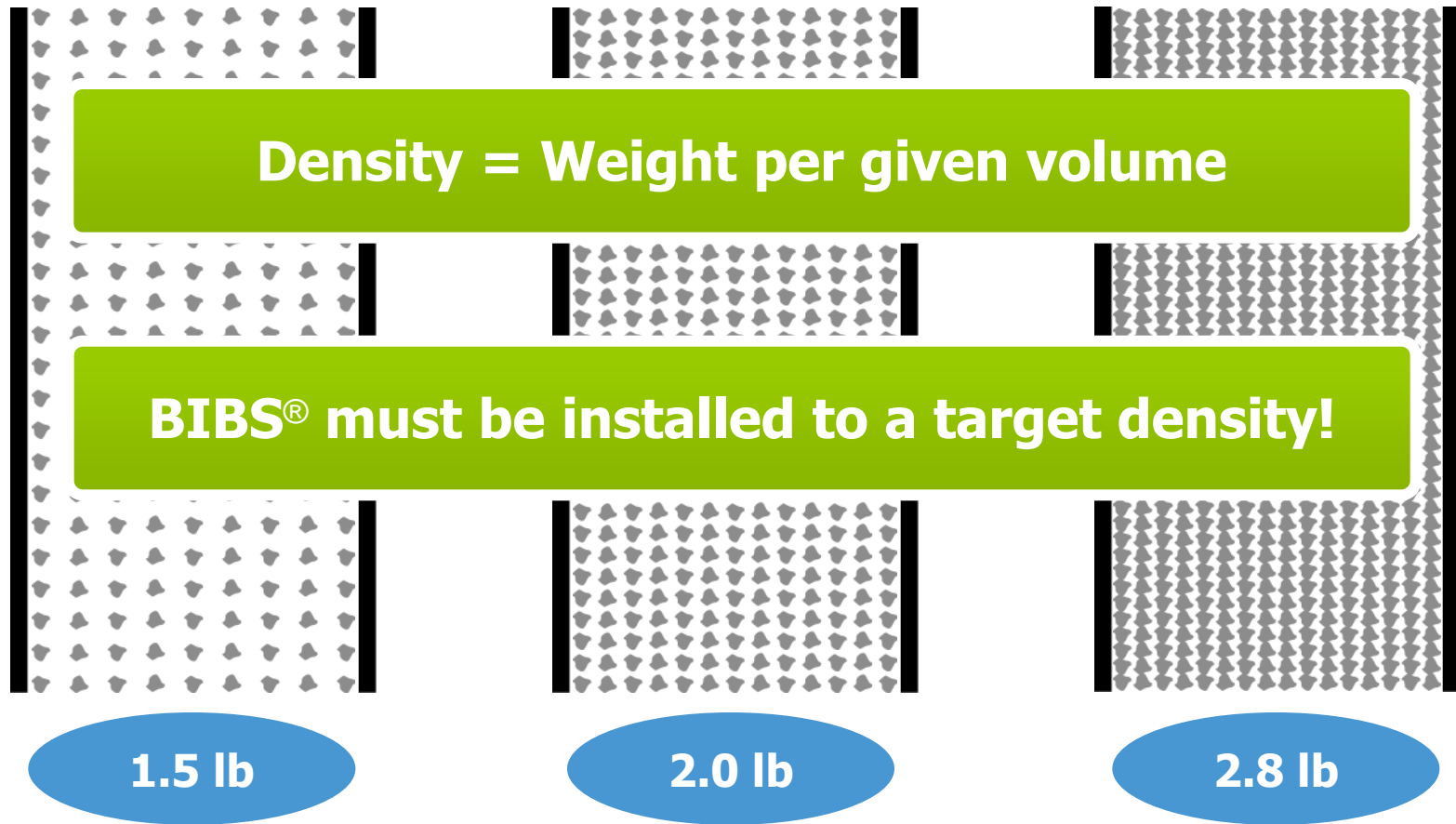
## Trained Certified Installers

- Net Stapled properly to hold fiberglass blow
- Fiberglass installed at correct densities
- Use of tested fiberglass with that brand of netting





**Ask about Density! A certified installer will know what you're asking. If not, you may have a problem.**



# Density Measurements



## Regular measurements are critical!

- After first 3 – 4 stud cavities
- Every 800 – 1,200 square feet after that
- Cubic Foot Test (Cavity Test) is the approved method of verifying density:
  - Use BIBS<sup>®</sup> Density Kit
  - Available through BIBCA, [www.bibca.org](http://www.bibca.org)
- Document the results!



# Cubic Foot Test



## 1. Remove 1 cubic foot sample

- Standard width cavity
- Measure the length, using table

## 2. Weigh the sample

## 3. Compare with target

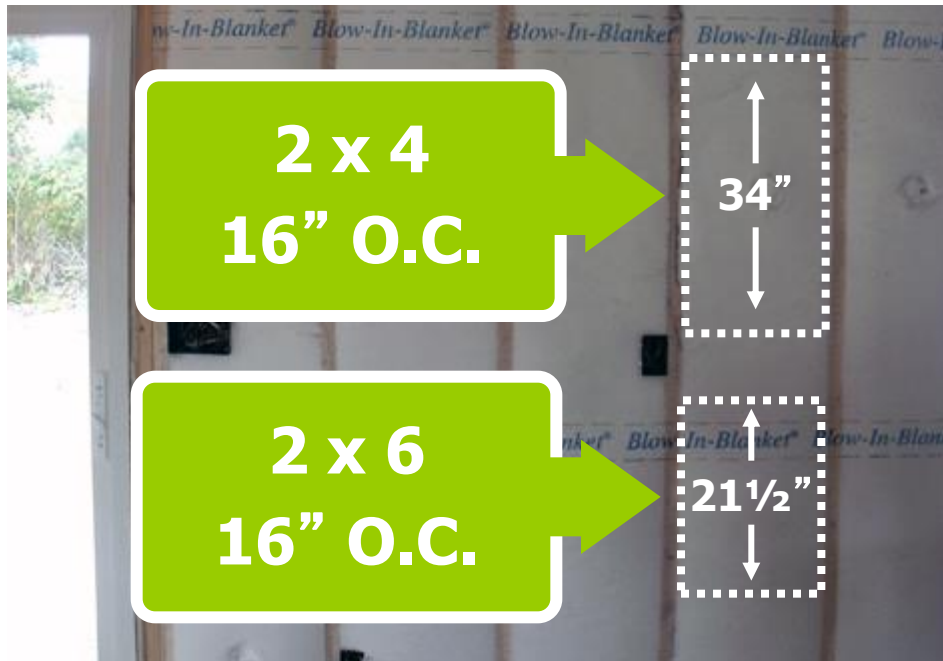
- Printed on every bag of fiber



# Measure 1 Cubic Foot



**Remember: 34" and 21 1/2"**



**Measure carefully and get all the fiber!**

# Measurement Table



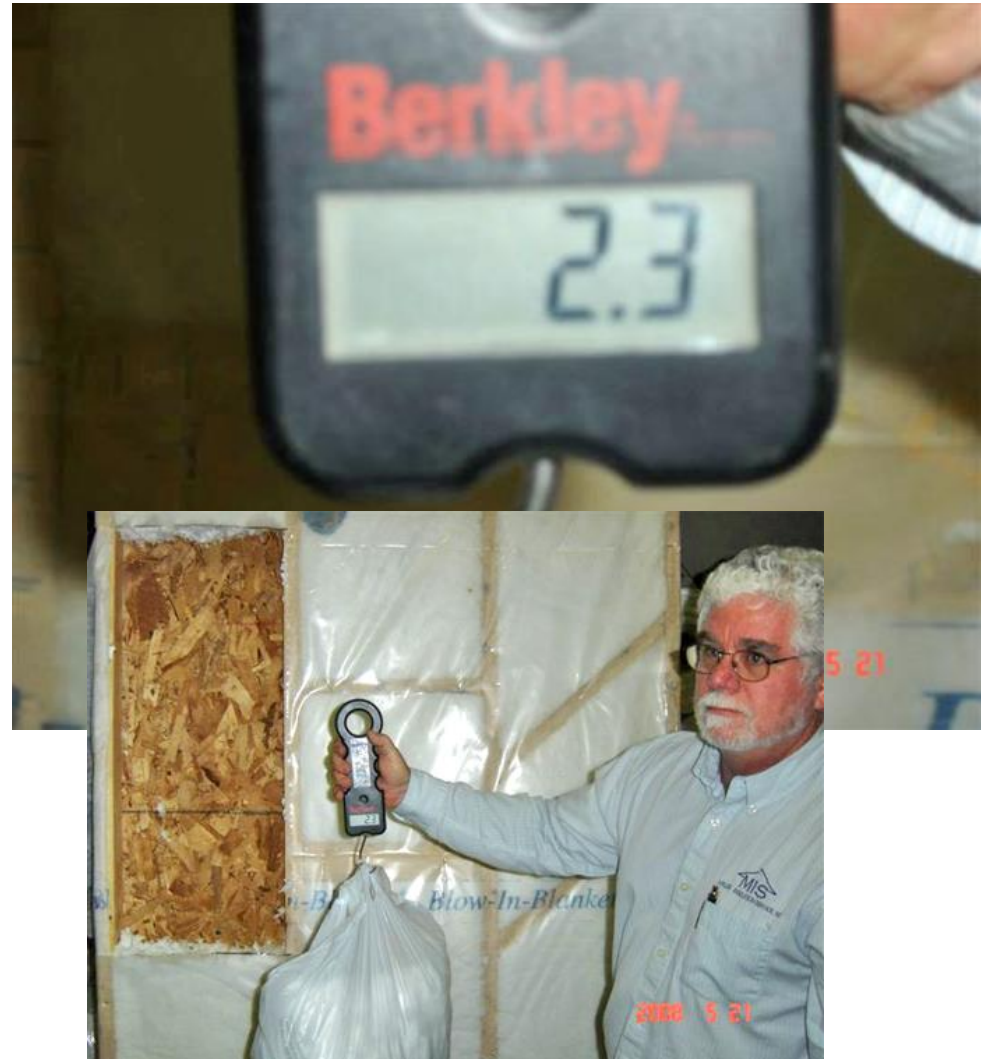
Wall Cavity Thickness		Remove this Length	
Stud size	Cavity depth	16" O.C.	24" O.C.
2x4	3 1/2"	34"	22"
2x6	5 1/2"	21 1/2"	14"
2x8	7 3/4"	16 1/2"	10 1/2"
2x10	9 1/4"	13"	8 1/2"

# Weigh the Sample



## Target density:

- About 2 pounds per cubic foot
- Depends on type of fiber
- Check fiber bag for target density



# **Our gift to HERS raters**



**BIBCA will provide any HERS rater with a density test kit at no cost if requested through your local, certified BIBS dealer.**

**Have your local BIBS contractor request one from us on your behalf.**

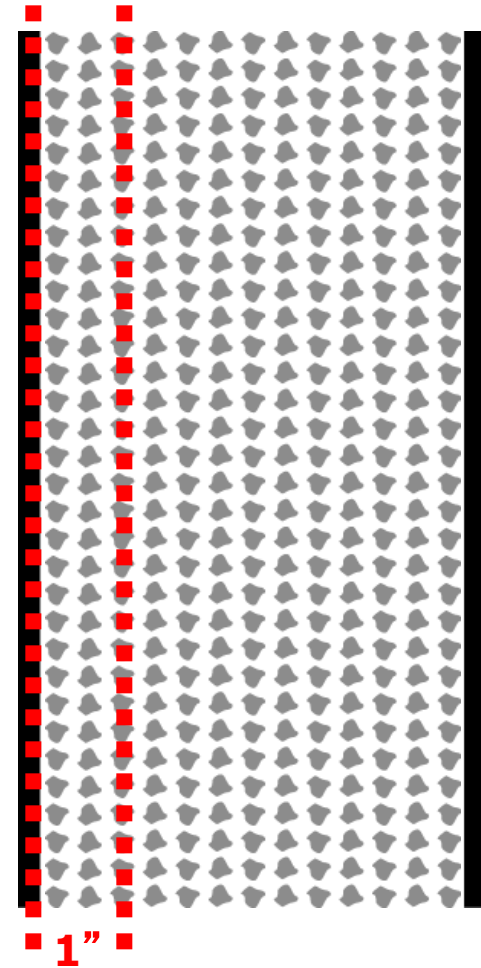
**The next time something just doesn't look right, you can test the density yourself. Your certified contractor can show you how.**

**BIBCA: 605-949-2427**

# What's the R-Value?



- BIBS® produces about 4.2 R-Value per inch
- R-values listed on fiber bag along with target density



**4.2 R-value Per Inch**



# Document the Densities!



## **FTC Rule 460 (US) and 16 CFR Part 460 (Canada)**

BIBS® is an on-site manufacturing process, and YOU are the manufacturer!

**Your company and the builder could be subject to a \$10,000 fine for incorrectly-installed BIBS®!**



# Training and Certification



## Initial training

- Classroom and hands-on training
- Written test

## Maintenance training (every 3 years)

- Online modules
- Online test

## Hands-on training (every 6 years)



# What Do We Certify For?



- Density

- Feed Rate

- Visual Dust

- Machine Performance

- Hose Type

- Blowing Time

- Static

- Respirable Dust

- Machine Settings

- Customer Input

# Outstanding People



## Trained and certified installers



# Is this a trained professional?



**Or a trunk slammer?**

**Check our web site or  
call the office:**

**[www.bibca.org](http://www.bibca.org)**

**605.949.BIBS**

# Knock Off Systems-Bait and Switch

## Know your insulation company

- Many companies label their systems as BIBS because it is well recognized. But it is not a true “BIBS”.
- They are installing some other “untested” system.
- They use different netting and different fiberglass that has not been properly tested as a system.
- Installers are not trained at proper densities so they are not able to verify an R-value and it could result in settling issues over time.
- This is a system that manufacturers will not stand behind.

# What to check for..



## It looks good but...

- Is the company certified...
  - Check [www.BIBCA.org](http://www.BIBCA.org)
  - Or other sites.
- Can the company provide proof of training or certification
- Where did they take density tests on the job and what were these test results



# Remember, our integrity as an industry...



## Is always on the line!!

- A little investigation will go a long ways
- Don't create a company who regrets ever hiring a contractor.
- We don't want any media reports where your customer is stating: "I would have rather lived in a tent."
- Let's give them what they paid for and have them shouting our praises





# Have them jumping for Joy!!

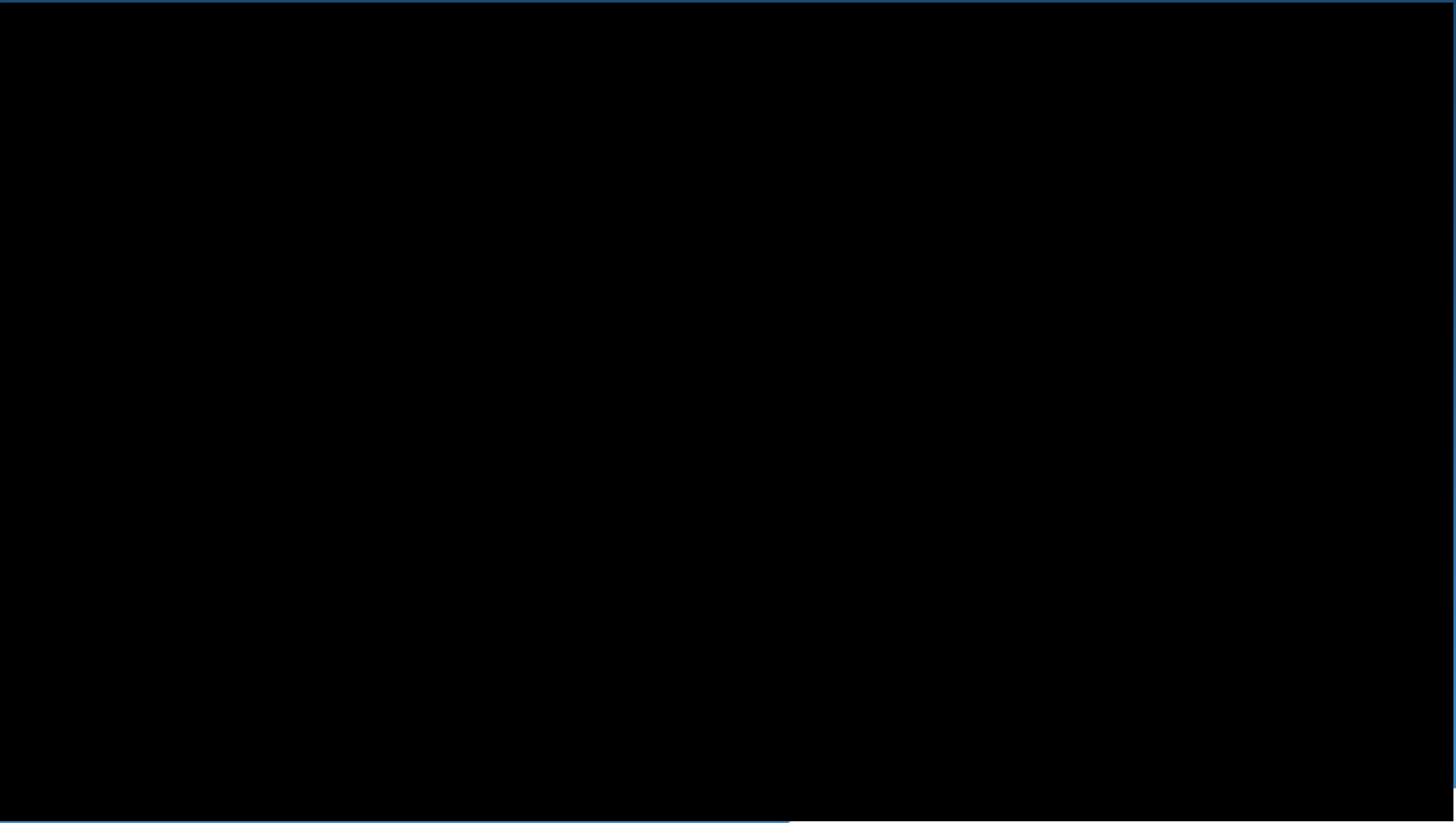


# Words to Live by...



**Remember, Like what you do and if you don't like it, do something else.**

***----Paul Harvey***



**blowinblanket**  
contractors association

# QUESTIONS?

