

#### Mike McDonald

#### Monday, February 11, 2013

### Presentation

- What TruProtect Is
- What TruProtect Does
- Who We Are
- Who Our Customers Are
- Modular Components
- Photos of Installations

## What TruProtect Is

- TruProtect is a patented, multi-layer protective sheeting that brings it all together:
  - EMI/RFI shielding
  - radiant barrier
  - insulation
  - sound reduction
  - fire retardant
  - environmentally responsible
- It is available in a range of sizes so that it can be used on walls, roofs, and as ceiling tiles in both residential and commercial buildings.



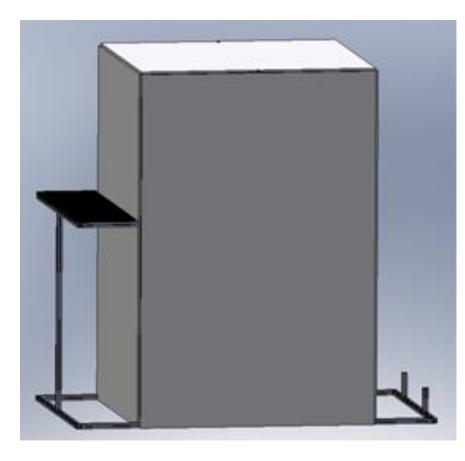
## What TruProtect Does

#### 1. RF Shielding/SCIF

- TruProtect's components and its patented configuration make it an excellent barrier to a broad spectrum of radio waves.
- TruProtect has been used in shielding secure facilities for government, commercial, and the military; EMC, RF, and wireless test laboratories; RF shielding test chamber; secure conference rooms; SCIF facilities; recording studios; anechoic chambers; computer rooms; office rooms; and sensitive areas in secure buildings.

## **RF** Shielding

- Drawing of anechoic chamber designed and built at the University of Rhode Island using TruProtect.
- The design team chose TruProtect for the walls of the chamber because of its shielding capabilities.
- It also had the added bonus of being light weight, low in cost, and recyclable.



#### **RF Shielding**

| Frequency                 | 1" TruProtect<br>Attenuation (dB) | 1/2" TruProtect<br>Attenuation (dB) | 1/4" TruProtect<br>Attenuation (dB) |
|---------------------------|-----------------------------------|-------------------------------------|-------------------------------------|
| 200 KHz, Magnetic Field   | 25                                | 25                                  | 25                                  |
| 200 KHz, Electrical Field | 100                               | 80                                  | 80                                  |
| 1 MHz, Electrical Field   | 100                               | 80                                  | 80                                  |
| 10 MHz, Electrical Field  | 100                               | 80                                  | 80                                  |
| 80 MHz, Electrical Field  | 100                               | 100                                 | 80                                  |
| 400 MHz, Plane Wave       | 100                               | >90                                 | 60                                  |
| 700 MHz, Plane Wave       | 100                               | 100                                 | 60                                  |
| 1 GHz, Plane Wave         | 100                               | 100                                 | 60                                  |
| 10 GHz, Plane Wave        | 100                               | 100                                 | 60                                  |

Tested on TruProtect using conductive 5 mil Al tape front and back. All layers of Al in the panel are electrically connected. Testing preformed by R.A. Mayes, Inc., Franktown, Colorado.

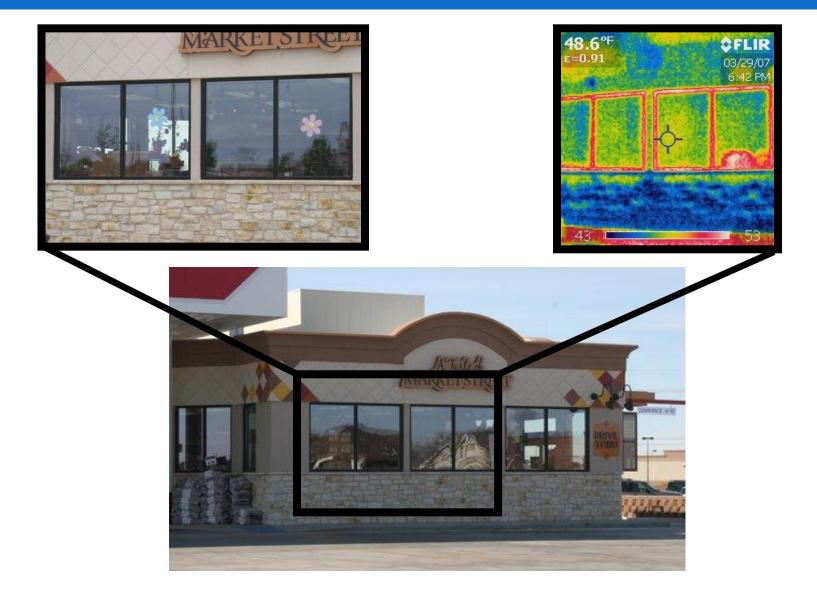
TruProtect

## What TruProtect Does



#### 2. Radiant Barrier and Insulation

 TruProtect is a barrier to radiant, convective, and conductive heat transfer. Installed on a roof or in walk-in coolers, it greatly reduces the communication of unwanted heat.



Infrared photo shows the efficiency of TruProtect as a radiant barrier and as an insulator.

#### **Radiant Barrier and Insulation**

| ASTM C 1363-97:<br>Thermal Performance Test         | For 1" - R-value of 2.89<br>For 1/2" - R-value of 1.61<br>For 1/4" - R-value of 1      |
|---|--|
| ASTM E903:<br>Hemispherical Spectral<br>Reflectance | For 1/2" - 81.5% Solar Reflectance<br>For 1/4" - 80.4% Solar Reflectance               |
| ASTM E408-71:<br>Total Emittance Test               | For 1/2" –<br>.02 Emittance98 Reflectance<br>For 1/4" –<br>.03 Emittance97 Reflectance |



## Noise

## What TruProtect Does

- 3. Noise Reduction
  - Privacy has become ever more essential for business and government offices. In addition to its EMI and RF shielding, TruProtect also blocks sound transmission.





#### **Noise Reduction**

| ASTM E90:<br>Sound Transmission Loss Test | For 1/2"<br>STC - 19; OITC - 15<br>For 1/4"<br>STC - 9; OITC - 7<br>For total assembly thickness 8"<br>STC - 51; OITC - 35 |
|---|--|
| NRC:<br>Noise Reduction Coefficient       | For both 1" and 1/2" - 0.6   |
| CAC:<br>Ceiling Attenuation Class         | For 1" - 43<br>For 1/2" - 38   |

TruProtect



## What TruProtect Does

- 4. Protection against Fire and Smoke
  - TruProtect has been treated with a unique chemical retardant against both fire and smoke damage. This makes buildings safer and more durable.



Fire test tunnel 1860° F



Minimal damage after fire test

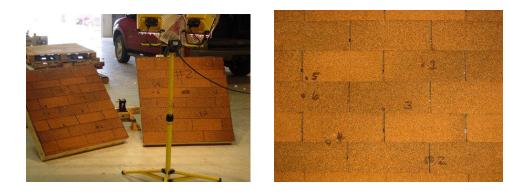
#### Fire and Smoke Retardant

ASTM E84-04: Surface Burning Characteristics Class A Fire Rating: Flame Spread Index = 25 Class A Smoke Rating: Smoke Developed Index = 20

## What TruProtect Does

#### 5. Hail damage reduction

 In a side-by-side test comparing a roof assembly with Truprotect as an underlayment and one without, four-pound steel balls were dropped from a height of 20 feet. The sample using TruProtect received significantly less damage than the sample without TruProtect.



#### Hail Damage Reduction

| UL 2218 Class 4 hail test | Test summary indicates 50% less surface<br>damage and 100% less structural damage<br>using 1/2" in comparison to a roof without<br>TruProtect. |
|---------------------------|--|
|                           |  |

## What TruProtect Does 6. Environmentally Friendly



- The multiple layers that make up TruProtect are bonded by adhesives that are plant-based and water-based.
- The active ingredient in the fire retardant is a very stable, aqueous, organic solution. It is non-regulated by the DOT and carries an HMIS rating of 1-0-0. It is listed as a nonhazardous product, and none of the components in the fire retardant material is listed by IARC, NTP, or OSHA.
- No special protective clothing is required for installation of TruProtect. A saw, nails, and tape are all the tools needed.
- The use of TruProtect on any project will help with attainment of LEED certification.

Our clients can be certain that our product is made of the finest components and is treated with environmentally safe materials to help significantly protect against fire, smoke, mold, mildew, and fungus damage. TruProtect is used in new construction and in retrofitting existing structures.

## Who We Are

- Founded in 2003, TruProtect began with an idea for reflecting heat to keep home attics cooler in summer.
- TruProtect is wholly owned by MiLyn, LLC, which has the exclusive, worldwide use agreement with its patent holders.
- MiLyn, LLC, is incorporated in the state of Texas, USA, and manufactures and distributes TruProtect.
- MiLyn, LLC, is and always has been debt free.

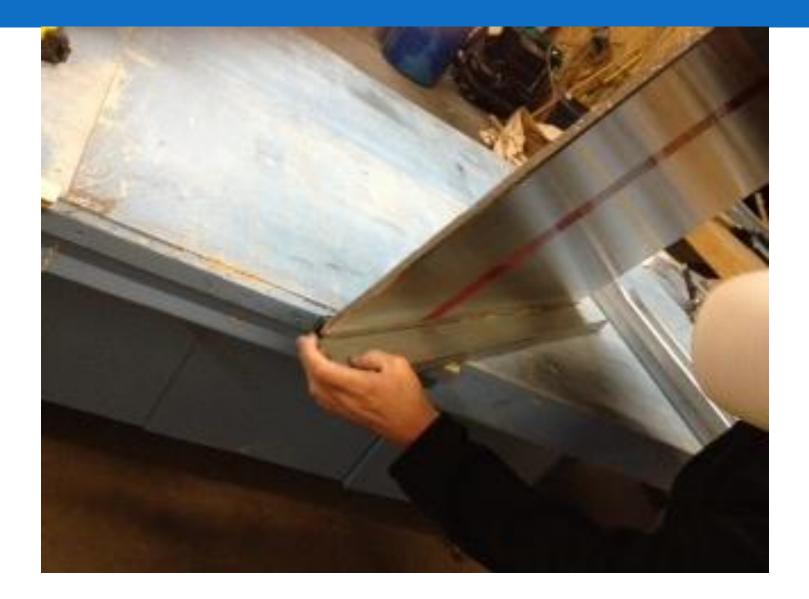
## Who Our Customers Are

- The following is a sample of our clients:
- U.S. Navy, Air Force, Marines, Army, and Coast Guard
- Homeland Security
- Federal Bureau of Investigation
- Central Intelligence Agency
- National Security Agency
- General Dynamics

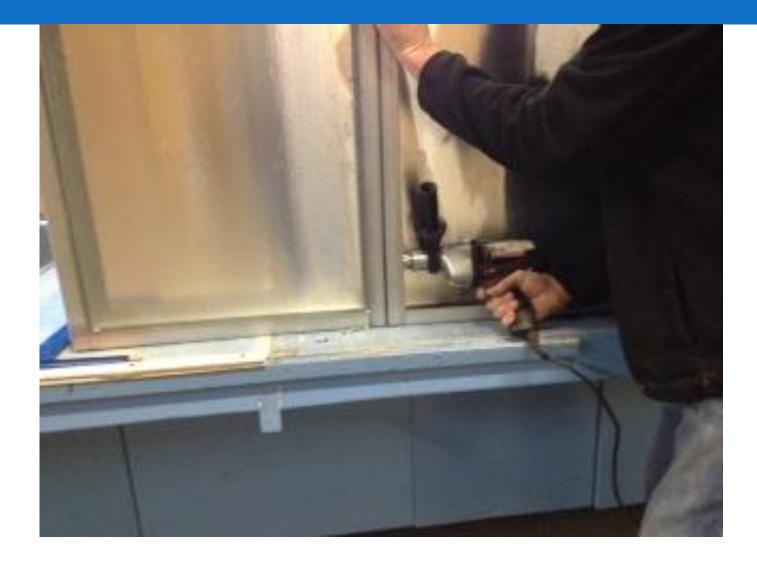
- AT&T
- Sprint
- Verizon
- Quest Communications
- Black and Vetch
- Schlumberger
- Bell Labs
- Smart Sync

## MODULAR COMPONENTS

TruProtect-shielded rooms prebuilt and ready for on-site assembly.



Each TruProtect panel is encapsulated inside a 4'x8' track that is surrounded by 18ga tracks.

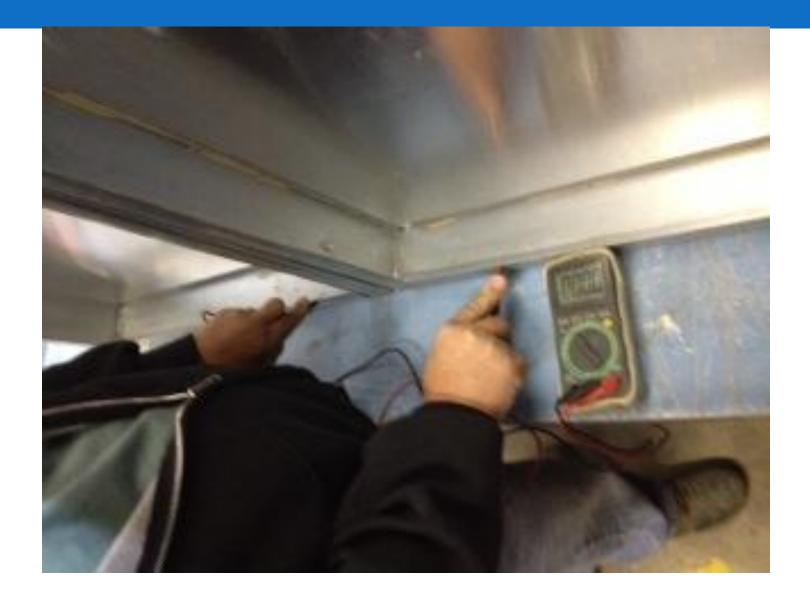


The four sides are riveted together. The panels are screwed together with self-taping screws.

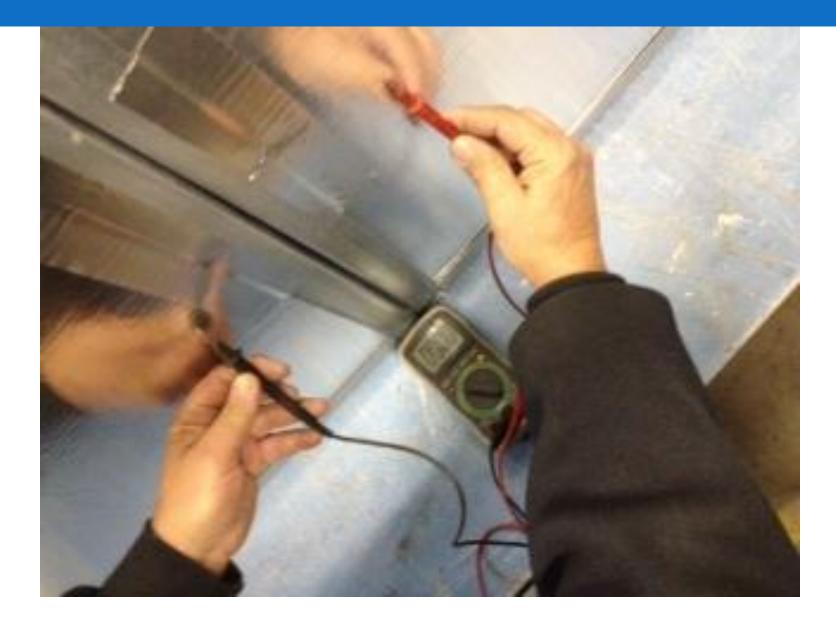


This will result in 4'x8' panels that have the  $\frac{1}{2}$ ",  $\frac{3}{4}$ ", or the 1" TruProtect surrounded by a stud wall or other building component.

- The components are premade and delivered ready to assemble.
- Once the panels are connected, the customer has an entire wall assembly.
- For insulating purposes, a 3' insulating bat may be added. Once the dry wall is screwed to the outer lip, it is ready to bed, and paint. The new, refurbished wall is completed.



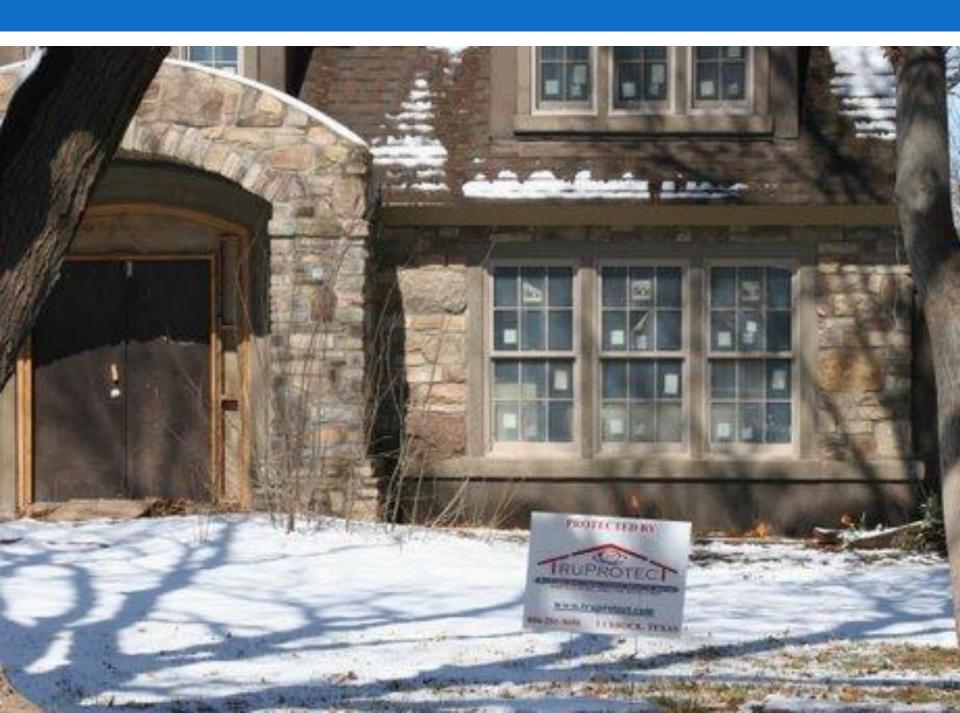
For RF/EMI, there is 0 ohms – perfect electrical conductivity.



#### The TruProtect panels OHM out at zero.

# Photos of Installation of TruProtect









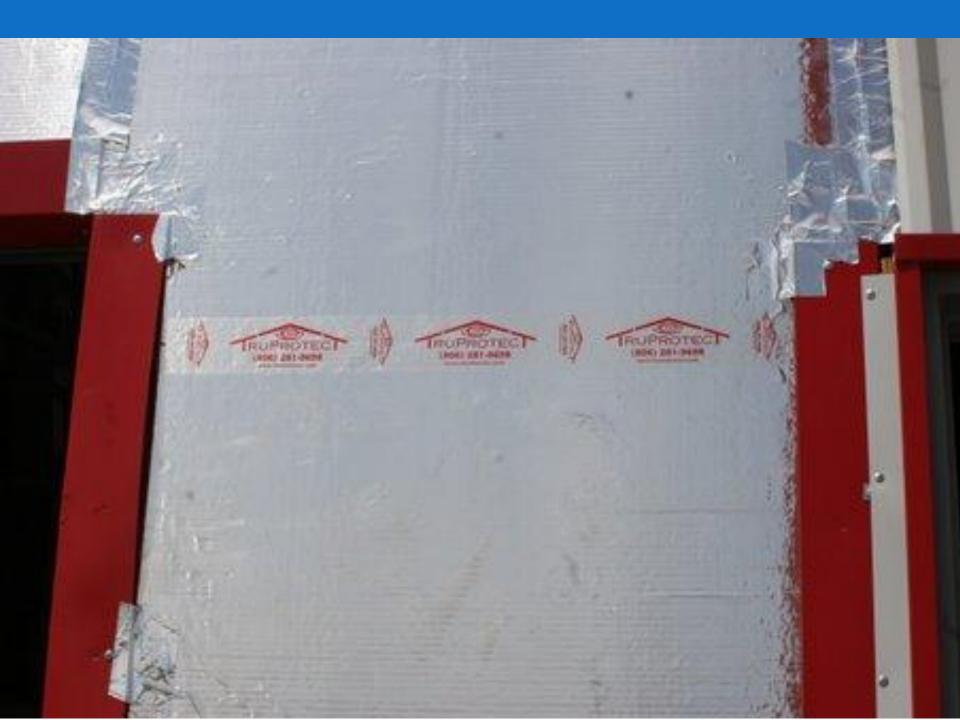




## STEEL DEPOT OFFICES

Hobbs, New Mexico











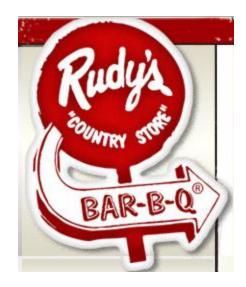






### **RUDY'S BAR-B-Q**

Amarillo, Texas









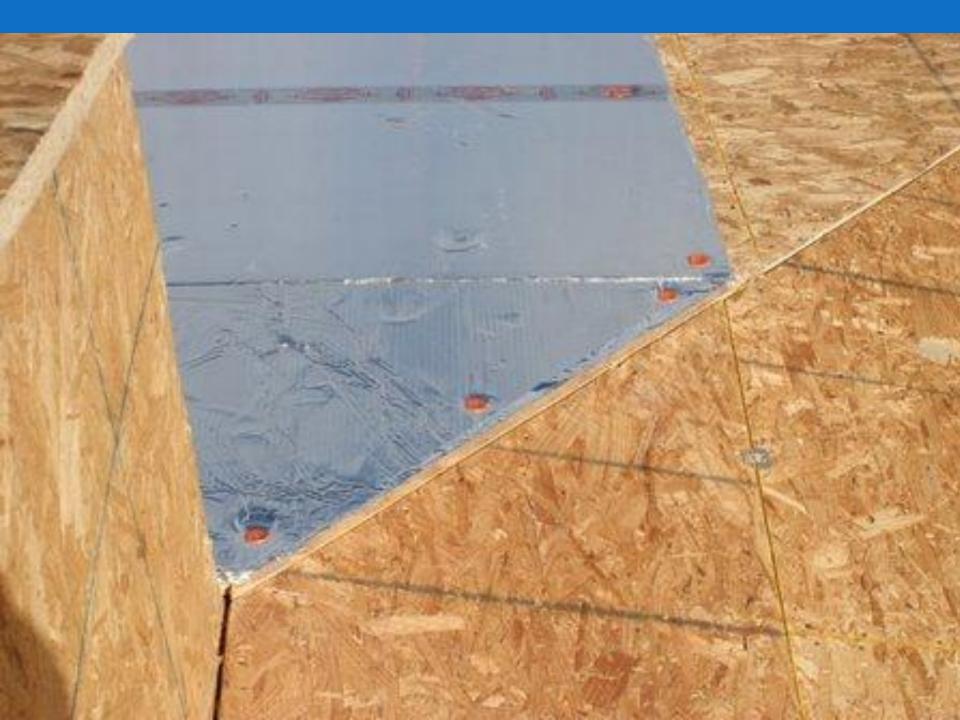


















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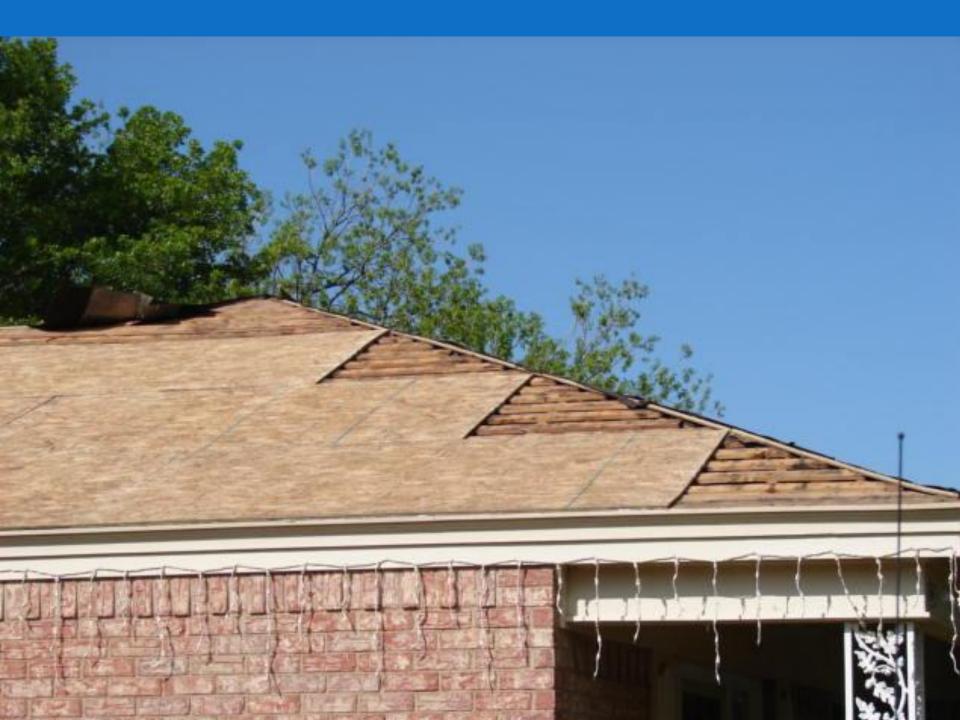


#### OSB-BACKED 1/4 INCH TRUPROTECT

Residence Midland, Texas









#### Garage Door

TruProtect also is available in panel size to fit perfectly on garage doors. Its light weight, sturdiness, and radiant barrier installed on a garage door keeps the garage temperature cool in summer and warm in winter.





#### Mike McDonald

www.truprotect.com Toll free: 877.219.5616 Cell: 806.781.2554

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