



# THERMASTEEL<sup>TM</sup>

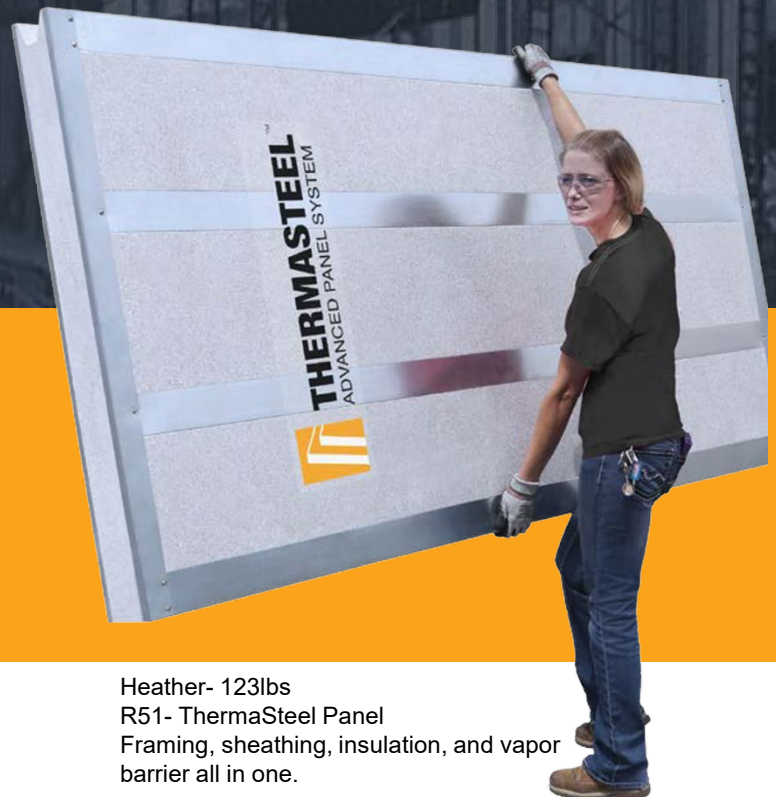
## ADVANCED PANEL SYSTEM

## THE COMPOSITE DIFFERENCE

MEANS BUILDING FASTER,  
STRONGER, SAFER, AND...  
SMARTER!

75,000 PROJECTS  
83 COUNTRIES

INSULATED PANELS FOR  
COMMERCIAL, RESIDENTIAL,  
INDUSTRIAL BUILDINGS



Heather- 123lbs  
R51- ThermaSteel Panel  
Framing, sheathing, insulation, and vapor  
barrier all in one.





# THE **PANEL** SYSTEM

COMPOSITE STRUCTURAL INSULATED PANELS

by THERMASTEEL

## **Strong**

- The ability to build up to eight stories with no additional structure.
- Hurricane, fire and seismic resistance.

## **Thermally Efficient**

- Provides the highest R-values available. Up to R-61 effective.

## **Cost Effective**

- Four-in-One structure, insulation, sheathing, and vapor barrier.
- Reduces time to enclose.
- Quick assembly reduces processes and labor at every stage, reducing overall cost.
- Pre-engineered system. Panels arrive on job site with rough door and window openings. Reduces labor cost, skill requirements, and scrap.

## **Sustainable**

20% recycled materials, 100% recyclable

## **Safe**

- Fire retardant
- Mold resistant
- Pest deterrant
- Non-toxic, VOC free



Thermally Broken - Dual Opposing Frames







# THE PANEL SYSTEM

## **X** PANEL Exterior Wall Panel



- Used mainly for exterior wall applications
- 5.5" or 7.5" thick, up to 4' wide and 12' tall
- Effective thermal performance of R51 to R61
- 4 or 5 structural studs on both faces of the panel (16" or 12" o.c.)
- Up to 42,000 plf load LRFD
- Ready for direct application of final skin
- Arrives on site with doors and windows cut

## **I** PANEL Interior Wall Panel



- Used mainly for interior wall applications or tiny homes
- 3.5" thick up to 4' wide and 12' tall
- Effective thermal performance of R28
- 4 structural studs on both faces of the panel (16" o.c.) Arrives on site with door openings cut

## **R** PANEL Roof Panel

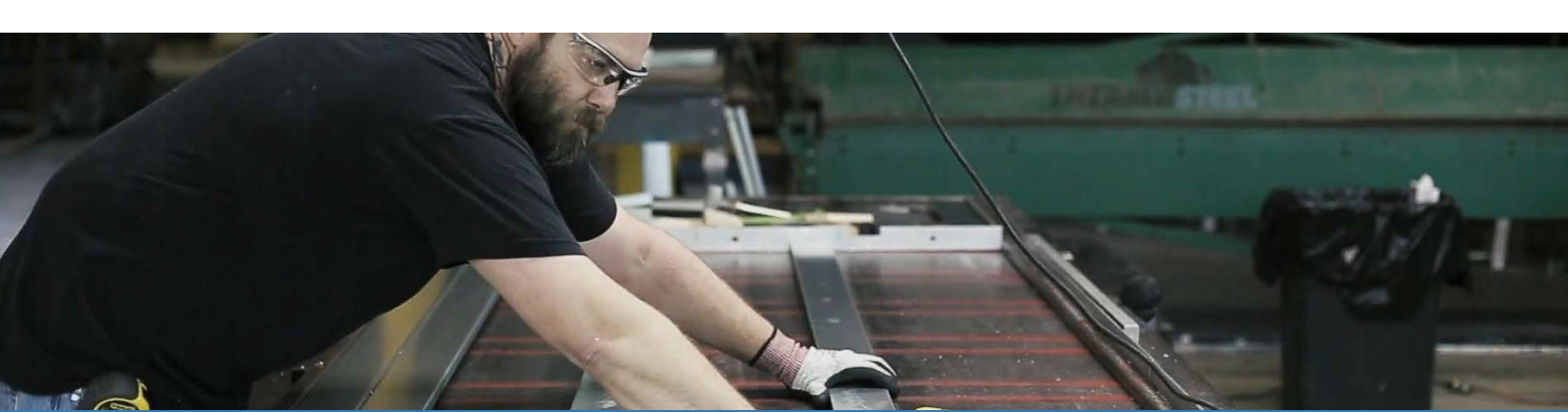


- 5.5" or 7.5" thick up to 4' wide and 12' long
- Effective thermal performance of R51 to R61
- 4 or 5 structural studs on both faces of the panel (16" or 12" o.c.)
- Load bearing means we can reduce trusses by 2/3 (every 4-6 ft o.c.).
- 2 panels can connect directly allowing for cathedral ceilings and A frames without supports

## **F** PANEL Concrete Floor Panel



- Stay in place form for concrete slabs
- 7.5" thick R58 insulation, 4' wide 12' long
- Two 8" wide channels for rebar in the reinforced beams
- Capable of spanning up to 50 ft clear with minimum shoring
- Reduces concrete by 40% (average section is 58 psf)
- High STC rating fire stop between floors
- Reduces labor time by over 60%
- 5 studs to hang ducts or attach sheathing directly



# THE PANEL SYSTEM

## **H** PANEL Hurricane Panel



- Designed, tested, and certified to withstand 185mph, including flying debris
- 5.5" or 7.5" thick up to 4' wide and 12' long
- Effective thermal performance of R51 to R61
- 4 or 5 structural studs on the interior faces of the panel (16" or 12" o.c.)
- 11 studs on the exterior face making it projectile-safe

## **S** PANEL Shear Wall Panel



- 5.5" or 7.5" thick up to 4' wide and 12' tall
- Thermally broken with three horizontal bracings
- Effective thermal performance of R51 to R61
- 4 or 5 structural studs on both faces of the panel (16" or 12" o.c.)
- Up to 2,420 plf with a 2.0 safety factor

## **B** PANEL Below Grade Panel



- Used for foundation, knee walls, and retaining walls
- 7.5" thick 1.5 density up to 4' wide and 12' tall
- Thermally broken with three sections and thermal performance of R61
- 4 or 5 structural studs on both faces of the panel (16" or 12" o.c.)
- Check the below grade manual for design guidelines and limitations

## **C** PANEL Ceiling Panel



- Used as interior application under the truss or on the bearing walls
- 3.5", 5.5", or 7.5" thick up to 4' wide and 12' long
- Effective thermal performance of R28 to R61
- 4 structural studs on both faces of the panel (16" o.c.)
- Pre-chased and ready to directly attach sheathing.



## ThermaSteel set out to advance how walls are made, the result is the ThermaSteel Panel Building System. If you can sketch it, we can make it!

**Strength** - No other building system provides the strength and capability of ThermaSteel Panels. Build up to 8 stories, without additional structure and high hurricane, fire, and seismic resistance.

**Faster Construction** - Reduces construction steps from 4 to 1, eliminating steps for framing, insulating, sheathing and vapor barrier. Panels are pre-engineered and manufactured in a quality-controlled environment to exact standards and delivered with door and window openings cut and ready for installation.

**Simple Installation** - Simple to install regardless of the labor skill level. Panels are delivered to job site numbered from the factory for a simple and fast install. Lightweight panels eliminate the need for lifting or cranes.

**Energy Efficient** - Designed for energy efficiency, delivering effective R-Value up to R-61 and reducing energy costs by up to 75%. R-Value also does not degrade (no thermal drifting over time).

**Flexible Cladding** - Allows for virtually any type cladding directly on panels, including (but not limited to) brick, siding, metal or stucco. Interior walls can be finished with dry wall, plaster or any other type of finish.

**Fire Safety** - Fire-resistant system that, with various fire assemblies, meets one- and two-hour load bearing requirements, and is a noncombustible assemble. Tests have also proven that **ThermaSteel panels** give off fewer toxins. Won't catch fire or create smoke.

**Exceeds Wind Safety Codes** - Meets or exceeds Dade County Hurricane Standards, withstanding 200 MPH winds and exceeding traditional building methods against flying debris.

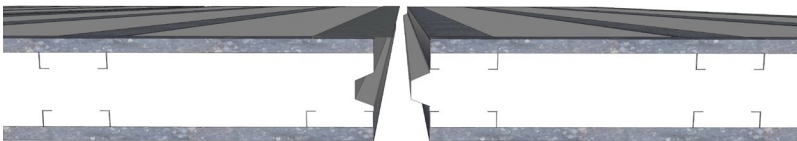
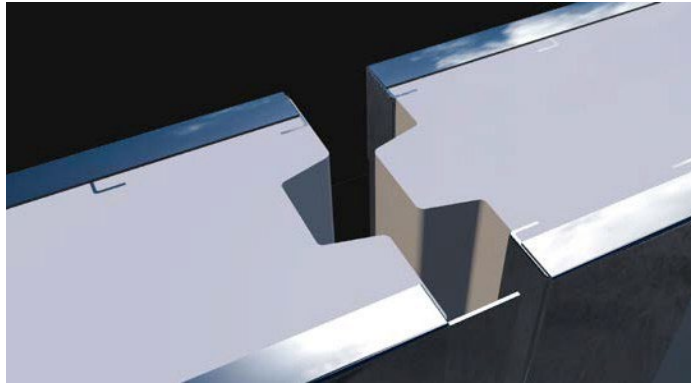
**No Mold** - Closed cell expanded polystyrene does not allow growth of mold and other fungi.

**Environmentally Friendly** - Made with recycled materials and completely recyclable. Does not "off gas". EPS (Expanded Polystyrene), CFC and HCFC free.

**Insect Deterrent** - Uses steel and expanded polystyrene - neither of which are of nutritional value to wood-boring insects such as termites.

**Sound Attenuation** - Improves sound attenuation, reducing sound conduction throughout the structure. Often used in multi-family, hotel/motel and dormitory projects where sound reduction is a key objective.

**Closed Cell** - Closed cell technology eliminates moisture absorption, increases structural strength, reduces air circulation and reduces sound transfer compared to open cell.





# The Composite Difference

**What is a composite?** A “composite” is two or more different materials bonded together to create a superior, often lighter and stronger material.

ThermaSteel patented STEEL and EPS bonding technology that results in the highest strength to weight ratio of any structural insulated panel, creating new efficiencies and possibilities in construction.

Reduce wall construction time and labor by up to 60%.

Up to 75% more energy efficient.

STRUCTURE

INSULATION

VAPOR BARRIER

SHEATHING

FOUR  
IN ONE

## COMPOSITE AEROSPACE

### BOEING 787 DREAMLINER

Lighter and stronger means safer and more efficient to operate.



## COMPOSITE AUTOMOBILES

### KOENIGSEGG REGARA

Light, fast and safe.  
Stops in record short distance.



## COMPOSITE BUILDINGS

### THERMASTEEL PANELS

Faster to build, up to 75% more energy efficient, seismic, fire, and hurricane rated.



# PERFECTING THE ENVELOPE

**THERMAL BRIDGING** occurs in walls when thermal energy (heat/cold) travels through more thermally conductive framing passed less conductive insulation. Fiberglass batt insulation has an R-value of 3.5 per inch, but the R-value of studs may be R-1.2 per inch or less. This means that the studs allow heat or cold to move through the wall system three times faster than the surrounding insulation. Though the advertised R-value of 6 inch fiberglass batt is R-19, the effective R-value of a typical wall assembly's is roughly R-4 to R-5 lower due to thermal bridging. ThermaSteel panels remove the thermal bridge resulting in higher effective R-value.

**AIR INFILTRATION** is caused by air leaks, holes, and gaps in the building envelope where insulation sags or pulls away from the top and sides of framing, electrical outlets, and pipes. Air Infiltration can reduce thermal efficiency by up to 30%

**Thermal Bridging** and **Air Infiltration** can turn walls into thermal exchangers as high pressure air flows through pockets and gaps in the building envelope. With wire chases formed into panels and recesses for electrical and plumbing cut onsite with a \*hot-knife, the integrity of the envelope is maintained, eliminating thermal bridging and air infiltration. 58% more efficient than stick built walls.



## ThermaSteel 5.5" Panel

The example below shows walls with interior gypsum and ready for exterior cladding to be installed directly to structural members with self-drilling screws as OSB and vapor barrier are not needed. Steel stud members placed at 16" on center. Expanded Polystyrene (EPS) bonded to steel studs forming a composite bond.



Gypsum

VS

Effective Thermal Conductivity Rating

**R-51**

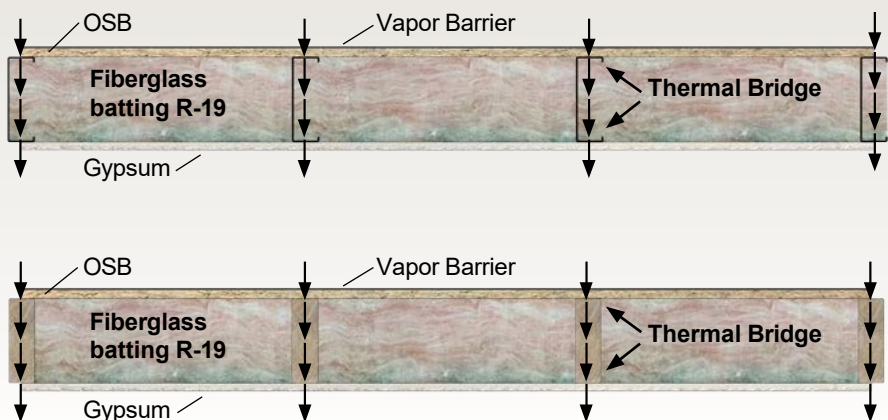


Tabbed connection to next panel with self drilling screws.

Tongue and groove, air infiltration block, sound baffle

## Traditional 5.5" Steel and Wood Framing

Example shown with interior gypsum, OSB sheathing, and vapor barrier required for exterior cladding.



Effective Thermal Conductivity Rating

**R-15**

Steel and wood studs oriented through wall transfer thermal energy causing heat gain in summer and heat loss in winter.

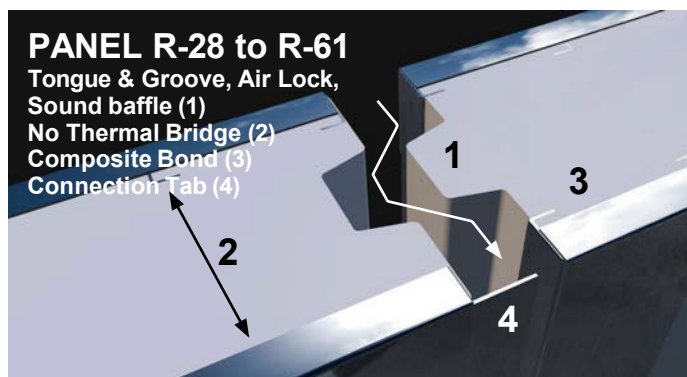
Air infiltration is caused by gaps that allow passage of air through and around insulation and is a major cause of high energy costs.



# TECHNICAL

## 1. PRODUCT DESCRIPTION

The ThermaSteel Building System is composed of insulated ThermaSteel panels using a composite of steel bonded to expanded polystyrene (EPS). The product uses partially recycled steel and is itself 100 percent recyclable. ThermaSteel panels are utilized for exterior walls, floors, basements, and interior walls, as well as roofs and ceilings. ThermaSteel panels are used in residential, commercial and industrial applications.



### Basic Use

The ThermaSteel Building System is used for commercial construction projects, single and multi-family unit, as well as industrial and institutional applications.

ThermaSteel panels are made using a patented process to bond light gauge dual opposing structural steel frames to fire retarding EPS. The result is a light weight composite panel of unequalled strength and versatility, that provides structure, insulation, sheathing, and vapor barrier in one unit.

ThermaSteel panels installation begins with the installation of the bottom track along the perimeter of the floor. The panels are then placed in the track, screwed in place and then screwed together along the leading edge steel. Once the panels are in place, a connecting

track is installed along the top of the panels. This forms a quick assembling building system that is lightweight and extremely strong. Because the studs are oriented to the face of the panel and the tongue-in-groove joints are used at the edges, the system provides a complete thermal break, with superior thermal performance. Rough openings for doors and windows are formed during the manufacturing process. Horizontal wire chases are molded into each panel to accommodate electrical wiring. Additional chases for electrical and plumbing are easily cut in the field with a hot knife.

The ThermaSteel Panel Building System supports staggered loads of multi-story structure. The "H", or Hurricane panel has passed the Southern Florida Hurricane Test. It has also undergone third-party testing for energy code approval, including Uniform Code Approval **IAPMO-ES 0128**.

**Table 1 - Panel Dimensions and Weights**

Thickness	Dimensions	Weight*
3 1/2" (89mm)	4 x 8' (1219 x 2438mm)	45-50lbs (20-22 kg)
	4 x 10' (1219 x 3048mm)	
	4 x 12' (1219 x 3658mm)	
5 1/2" (140mm)	4 x 8' (1219 x 2438mm)	50-55lbs (21-23 kg)
	4 x 10' (1219 x 3048mm)	
	4 x 12' (1219 x 3658mm)	
7 1/2" (190mm)	4 x 8' (1219 x 2438mm)	55-60lbs (23-27 kg)
	4 x 10' (1219 x 3048mm)	
	4 x 12' (1219 x 3658mm)	
*Weight depends on the gauge of steel studs		

## Composition and Materials

### Panels

ThermaSteel panels are available in 3.5, 5.5 and 7.5 inch thicknesses.

**Note:** A standard 4' x 8' x 3.5" (1219 x 2438 x 89mm) panel weighs only 45 pounds (20 kg).



### Studs

Studs are 24-12 gauge with standard G-60 or G-90 galvanized steel positioned on 16 inch (406mm) or 24inch (609mm) centers on both sides of the panel.

### Cladding

Facings are not required until after panels are in place on site. Assemblies are also available with one-hour or two-hour rating. Exteriors may be cladded with any type of approved siding.

### Facings and Foam - EPS Densities

- ▶ 3.50" (89mm) panels = 1.5 lb/ft<sup>3</sup> (24 kgf/m<sup>3</sup>)
- ▶ 5.50" (140mm) panels = 1 lb/ft<sup>3</sup> (16 kgf/m<sup>3</sup>)
- ▶ 7.50" (190mm) panels = 1 lb/ft<sup>3</sup> (16 kgf/m<sup>3</sup>)

Interior walls must be covered with a minimum of .5" inch (13mm) drywall or plaster for a minimum 15 minute fire rating. Assemblies are also available with a one-hour or two-hour rating. Exteriors may be clad with any type of siding, no sheathing required.

### Panel Connection System

Panels interlock with tongue-in-groove joints and self-drilling tech screws. The preferred method is to use metal track for the top and bottom plate. If wood plates are used, only single plates top and bottom are required.

Plates are attached to the panel with 3" x 5" inch (76 x 127mm) galvanized shear plates at each stud. Tongue-in-groove joints and sheet metal screws allow quick and easy panel connection.

### Wiring

Horizontal wire chases are molded in at factory as a standard feature.

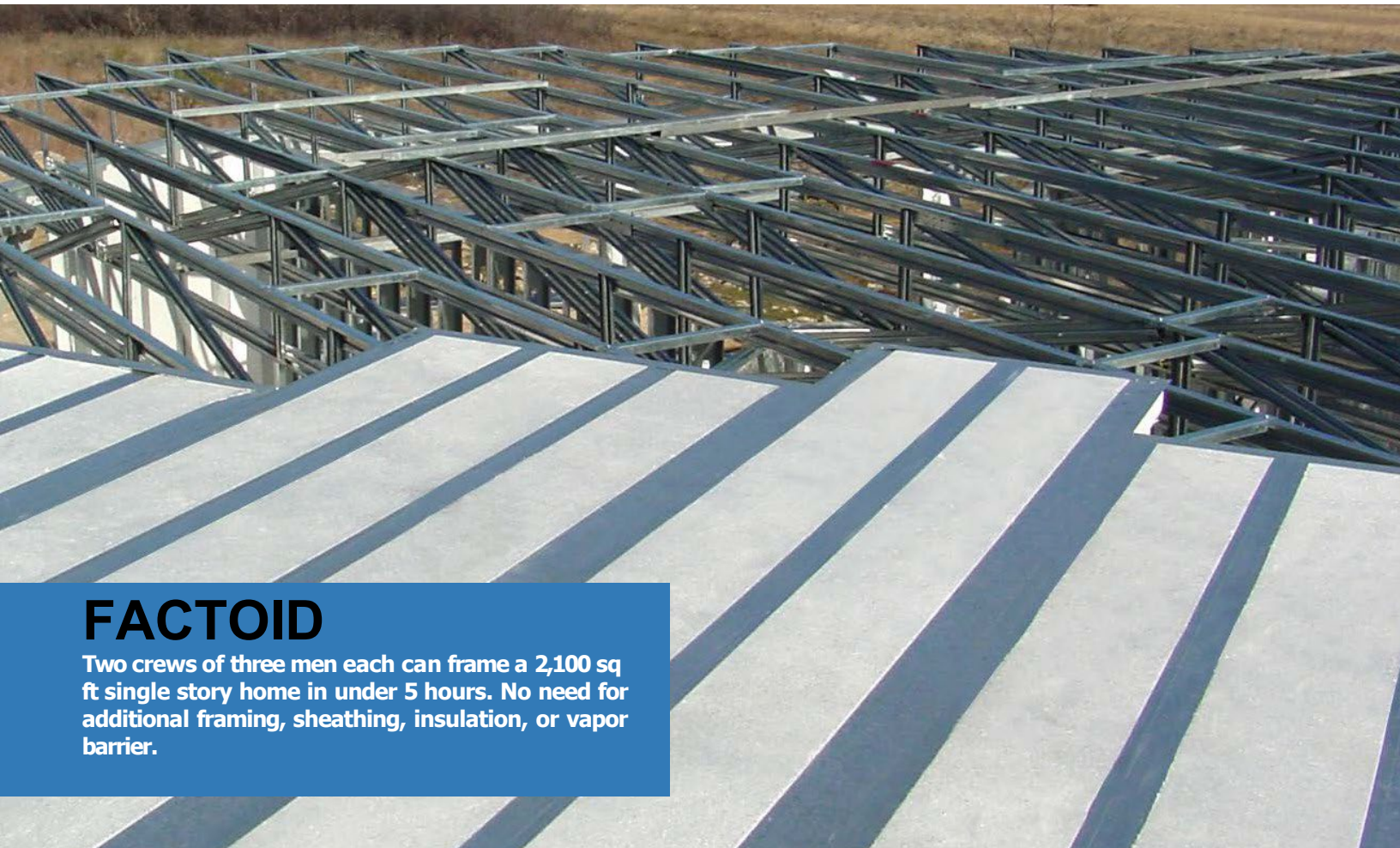
## Colors, Finishes, and Coverings

All ThermaSteel panels can be cladded in the field with synthetic stucco, vinyl, Hardie Board, brick, rainscreens or virtually any other cladding materials.

- ▶ Eliminates labor costs associated with insulating, sheathing, installing vapor barriers, blocking, let-ins, ladder bracing and thermal barrier
- ▶ Waste and cleanup costs are minimized
- ▶ Minimizes installation time, which equates to lower construction loan interest and security costs

## Benefits

- ▶ Meets energy code requirements without adding extra material, while remaining structurally sound.
- ▶ No food value for insects



## FACTOID

Two crews of three men each can frame a 2,100 sq ft single story home in under 5 hours. No need for additional framing, sheathing, insulation, or vapor barrier.

- ▶ Suitable for multi-story, high-rise applications, as well as infill or curtain wall applications
- ▶ Offers loadbearing, sound reduction, thermal insulation and vapor barrier characteristics
- ▶ Flexibility with both gauge of steel and thickness of the panel thickness to meet projects requirements.
- ▶ High R-value
- ▶ Thermally Broken
- ▶ Reduced framing time

## Product Limitations

The panels should not be used in areas where solvents such as gasoline or anything petroleum based, including acetone, are present.

## 2. TECHNICAL DATA

### Applicable Standards

American National Standards Institute (ANSI)

- ▶ **ANSI/UL263** Standard for Safety for Fire Tests of Building; One-hour Load Bearing and two-hour Load Bearing Fire Endurance

American Society for Testing and Materials (ASTM)

- ▶ **ASTM C518** Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow
- ▶ **ASTM E90** Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
- ▶ **ASTM C1512** Freeze/Thaw



### Technical Reports

- ▶ Hurricane Test Laboratory (HTL) Structural Test Report #98072. 2-- 2 2 4 1
- ▶ IAMPO Report 128 in Compliance with the following code and regulations: 2012, 2009, & 2006 International Building Code (IBC) 2012, 2009, & 2006 International Residential Code (IRC).
- ▶ IAMPO Report 128 Evaluated in Accordance with: 2007 & 2001 North American Specification for the Design of Cold-Formed Steel Structure Members (AISI). 2.
- ▶ ASCE 7-2005 & 7-2010 Minimum Design Loads for Buildings and Other Structures. South Florida Code Compliance #HTL 98072.
- ▶ Underwriters Laboratory (UL) BRYX.R4775 Foamed Plastic.
- ▶ Uniform Code approval ES 128.
- ▶ U.S. Department of Housing and Urban Development (HUD) Structural Engineering Bulletin 1072, Rev.

### Testing

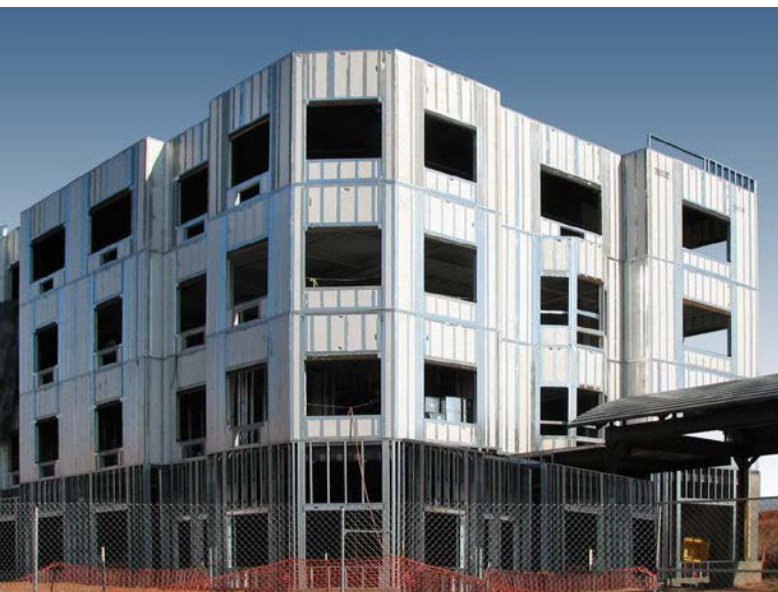
Laboratory test results are available for compressive, transverse and racking shear using the standard ASTM E72 to determine the strength of the system. Fire and sound test data are also available. A modified "H" panel has passed the Florida Hurricane Test Lab requirements for Dade and Broward Counties. Test results for large impact, cyclic load, air and water infiltration are also available.

### Environmental Considerations

ThermaSteel panels are made with "ENERGY STAR" compliant material. The panels have undergone third-party testing for energy code approval.

ThermaSteel panels provide not only structural integrity, but excellent insulation properties as well. The EPS component of the panel is solid and does not provide voids or allow air movement through the walls. ThermaSteel panels are molded with steel studs and EPS bonded together. ThermaSteel structural members contains a minimum of 20 percent recycled steel and is 100 percent recyclable.

ThermaSteel panels are used not only in commercial





and industrial projects, but also in residential projects and as such, can qualify for credits based upon the LEED® 2009 (Leadership in Energy and Environmental Design) for New Construction and Major Renovations rating system.

**Table 2 - LEED Points**

Objectives		Max LEED Points	
		Res	Com
EA 1:	Optimize energy performance	34	19
EA 2.1:	Insulation	2	-
EA 3:	Air filtration	3	-
MR 1.4:	Framing efficiencies	3	-
MR 1.5:	Off-site fabrication	4	-
MR 2:	Construction waste management	2	2
MR 2.2:	Environmentally preferable materials	2	-
MR 3.2:	Construction waste reduction	3	-
MR 4:	Recycled content	-	2
MR 5:	Regional materials	-	2
RP 1:	Regional Priority	-	4
ID 1:	Innovative in Design	-	1

## Material Safety Data Sheet

MSDS documentation is available from ThermaSteel and can be downloaded at [www.thermasteelinc.com](http://www.thermasteelinc.com).

## Firespread/Smoke Performance

### Closed Cell Expanded Polystyrene (EPS)

Expanded polystyrene (EPS) meets the flame-spread and smoke performance characteristics shown in Table 3.

**Table 3 - EPS Smokespread and Smoke Performance**

Thickness (max)	1" 25mm	2" 51mm	4" 102mm	5" 127mm	6" 152mm
Flamespread	5+	5+	5++	5++	5++
Smoke Developed	55-90+	55-90+	55-90++	55-175++	55-175++

### Fire Rated Wall

ThermaSteel panels meet a one-hour and two-hour load-bearing fire endurance and hose stream tests in accordance with the Standard, Fire Tests of Building Construction and Materials, ANSI/UL 263, (ASTM E119, NFPA No. 251) and satisfies non-load bearing fire requirements in accordance with other tested assemblies per NFPA 285.

## R-Values

**Note:** Meets or exceeds 2023 energy code for both commercial and residential buildings.

**Table 4 - R-Values**

Thickness	R-Value	Effective R-Value
3 1/2" (89 mm)	R-14	R-28
5 1/2" (140 mm)	R-20	R-51, *R-54 (HD)
7 1/2" (190 mm)	R-33	R-58, *R-61 (HD)
*HD - High Density EPS		

## Thermal Conductivity

Unlike other insulations, the thermal conductivity of closed cell EPS used with ThermaSteel panels decreases at a lower average mean temperature per ASTM C518.

## Sound Performance

The panels have been tested in accordance with ASTM E90 and E413 as a wall system for basements, walls, roofs and ceilings. Visit [www.thermasteelinc.com](http://www.thermasteelinc.com) for more informaton.

## 3. INSTALLATION

Contact ThermaSteel for design and assembly documentation.

### Preparation

1. Study the appropriate drawings before beginning construction and assembly.
2. Unload the flatbed trailer at the job site.
3. Stack the panels for each floor so that they are in the necessary sequence for erection.

**Note:** Panels are usually set starting at one corner of the building and proceeding in a counter-clockwise fashion.

4. Verify that the dimensions of the slab or subfloor are in accordance with contract documents and coordinate with shop drawings.

**Note:** Dimensions should be within the tolerances stipulated by the design professional and/or by good construction practices.

5. Locate conduit stub-ups (if any) and drill holes in base plate.



## Methods

A level work area is recommended. This area should be cleared of debris and a baseline marked at the bottom and left hand side of the assembly area.

### Preparation of the Foundation

1. Attach panels to the foundation using steel channel tracks or wood plates per local code.
2. Set steel tracks in a waterproof inhibitor such as roofing felt, foam tape, etc.

**Note:** Size and spacing of anchors shall be determined by a design professional based on building code requirements.

3. Caulk and set baseplates (track) to building dimensions and secure to the slab or subfloor using anchors as per the design drawings.

**Note:** Verify that plates are leveled and the corners are square. If the foundation is not level, shim and grout with cement to obtain a level baseplate (track). Do not try to obtain a level wall by shimming the panels.

4. Once the bottom baseplates (track) are set and leveled, verify each panel dimension along the baseplate.
5. Put two screws per stud for track or nail attachment plates to both sides of wood baseplates.
6. Locate the attachment plates to fall at each panel joint and each steel stud when using wood plates.

### Wall Assembly

1. Once the assembly area is cleared and marked, consult the floor plan and determine which sections are to be assembled and in what sequence.
2. Using the element numbers as reference, obtain the necessary panels and lay them out with the interior face down.
3. If specified, caulk joints and push the tongue and groove together.

**Note:** Each lap joint can be gaped open up to 1/2" inch (6.4 mm) as needed to adjust for discrepancies in wall length.

4. Check the section for overall dimensions and for squareness.
5. Once satisfied with the alignment, screw the panels

together through the leading overlap edge metal as shown by the applicable engineering drawing or by attaching shear plates as indicated in the IAPMO ES 128 report.

6. Locate conduit stub-ups on panel, if any, and drill up from panel bottom.

**Note:** Mark the location of the conduit stub-ups on subfloor.

### Top Plates

1. Follow the applicable guidelines and procedures in the assembly and installation of wall plates.
  2. C-channel steel top track per the specification drawings or tie sections together using wood top plates.
  3. Cut the top plate or track onsite to allow overlap to the center of the next panel section steel stud at 16 or 24 inches (406 or 610 mm).
  4. Fasten attachment plates to the top plate or track so that the attachment plates will fall at each panel joint and vertical steel stud in the panel.
  5. Drill the top plate or track to match conduit or wiring chase locations, if any, in the assembled section before attaching the plate or track to the panels.
  6. Caulk the track (or panel end) and attach the top plate or track to the wall section by placing screws in the shear plates or track, depending on what is used.
- Note:** This connection is temporary and is used only to keep the top plate in place during erection of the walls. The top plate is permanently secured to the wall sections after the floor or roof system has been set, which loads the wall.

### Setting the Wall

1. Caulk the top of the baseplate (track) and raise the assembled wall section into place.

## CASE STUDIES

### Two Thermasteel Homes

1. 1,900 Sqft. Asheville, NC. Winter 2010 thru 2011  
Dec and Jan heating cost average 35/mo.  
**Avg six month heating season cost. \$18/mo.**

2. 1,800 Sqft. Mebane, NC. 11/2012 thru 10/2013  
Heat Pump HVAC  
Highest Monthly Cost: \$24.64  
**Average heating and cooling cost - \$10.50/mo.**



# TECHNICAL CONTINUED

2. Connect the panels to the baseplate per the engineering drawings and installation guide.
3. Attach the overlapping top plates (or track) to each other per the engineering drawings and installation guide.
4. Temporarily brace the top of the wall to the ground or floor so it stands true and plumb.

## **“C” or composite openings for doors, windows, etc.**

Some panel openings are assemblies consisting of two or more components. These are shipped disassembled and must be assembled on site. Refer to the data sheets provided and assemble these sections before setting them in place. As in all assemblies, carefully check the unit for overall dimensions and squareness before setting it into wall section.

## **Assembly of Panels**

All bottom plates (or track) must be level before the panels are set.

**Note:** If shimming is necessary to obtain level bottom plate (or track), shim (and grout) under the plate and not between the panel and plate.

Before making the final connections to the erected wall the walls must be plumb.

Once the panels are in place for one floor the overall dimensions and squareness of the building should be checked before proceeding with the assembly of any upper floor deck or roof system.

## **Precautions**

Protect panels from high winds and sharp impact.

### **Inspection of Panels**

Panels have been checked for density and fusion quality and for dimensions before shipment, but should be checked for damage and spot-checked for dimensions as

they are unloaded and stacked.

As a general rule, any defect in the polystyrene core of the panel, such as small cuts or nicks will not affect the integrity of the panel. Damage to the metal will affect the panel's strength and integrity and can result in a rejected panel.

## **On Site Changes**

In general, any changes deemed necessary onsite must be cleared with the manufacturer before the changes are made.

## **Buckles Or Dents**

Reject any panel with vertical steel members that have any buckles or dents. The panel can be salvaged by cutting out the damaged section and inserting a wood or metal building stud. Fill gaps with insulation. Bends may be straightened in the horizontal metal at the top and bottom edges of the panel. Straighten any bends or dents in the leading edge overlap metal.

## **Electrical Boxes**

Use a hot knife or other acceptable cutting tool. Do not exceed the box dimensions and where possible, locate the box beside a vertical steel channel for screw attachment. Boxes should have recessed ears or brackets behind the wall cladding.

## **Wiring or Conduit Chases**

If chases provided are not used, vertical chases may be cut into the polystyrene with a hot knife or other acceptable cutting tool. Vertical chases shall be cut a minimum of two inches (51 mm) from any vertical steel channel. Do not exceed half the panel thickness in depth or one inch (25 mm) in width when making these cuts. Horizontal chase cuts may be extended behind the vertical metal by drilling with a one inch (25 mm) bit near mid-depth of the panel.

## **Safety Considerations**

The panels may be handled by one or two workers. The

following rules should be followed:

- ▶ Gloves should be worn at all times when moving panels. The metal edges must be handled carefully to avoid cuts.
- ▶ Do not remove panels in high wind conditions. The surface of the panel will catch the wind and can create a potentially hazardous condition.
- ▶ If high winds are possible, panels must be sheltered, weighted or otherwise protected from moving.

## 4. AVAILABILITY AND COST

### Availability

Products are shipped both nationally and internationally. Contact manufacturer for further details.

### Cost

Prices are calculated per square foot of wall, floor and roof panels. Since project applications and structural load requirements often dictate the size and type of panels needed, the manufacturer's standard policy is to provide estimates from architectural drawings. The price per square foot of wall may vary between different types of panels.

In most cases ThermaSteel will adapt the customer's plans to its system.

ThermaSteel can readily provide a estimate for

customer's set of drawings.

## 5. WARRANTY

ThermaSteel offers a limited warranty on its products. Contact ThermaSteel for details and limitations.

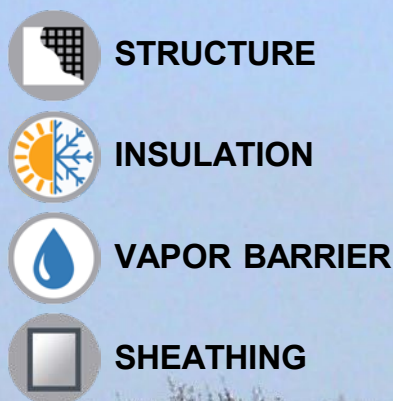
## 6. MAINTENANCE

No maintenance is required.

## 7. TECHNICAL SERVICES

ThermaSteel support is available to review technical details and plans if needed. Additional support personnel can be hired on a per diem basis. ThermaSteel offers detailed shop drawings and an assembly manual.

**PLEASE NOTE:** Certain designs and regions require a seal or letter of recommendation from a licensed structural engineer. Check your local building codes requirements. ThermaSteel can refer you to an engineering design services, stamping, domestic and internationally and Value engineering familiar with ThermaSteel panels.



**STRUCTURE**

**INSULATION**

**VAPOR BARRIER**

**SHEATHING**

**FOUR  
IN ONE**

## TESTIMONIAL

"To my surprise the utility bill for my first two month was \$32. That's 84% less than I used to pay for the same size house."

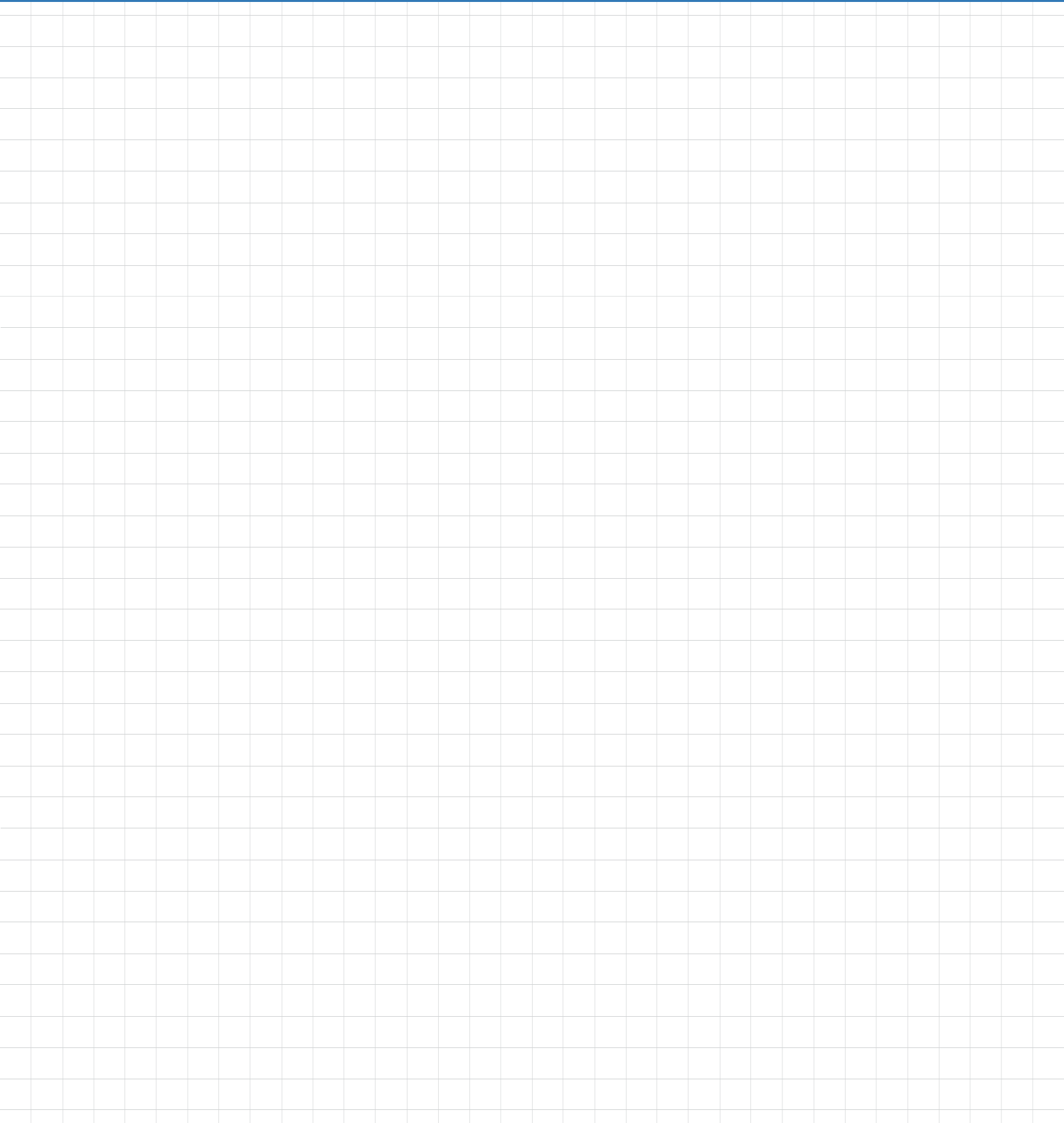
- Don Bowles - Thermasteel homeowner





**THERMASTEEL™**  
ADVANCED PANEL SYSTEMS

# PROJECT NOTES



# PROJECT NOTES

## TESTIMONIAL

"On September 5th the island of Anguilla took a direct hit from Hurricane "Luis". We had 175mph winds and higher pounding us for nearly 10 hours. The windows in the nearby airport designed to withstand 200 mph winds were blown completely out. The only damage we sustained was from a 40 foot container that was picked up and thrown into the side of our building. Even so, there was little damage and no affect to the structural integrity of the building."

- Gary L. Hunter



**THERMASTEEL**  
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Visit [www.thermasteelinc.com](http://www.thermasteelinc.com) to learn more

