Introducing MetRock SCIP

The Premium Structural Concrete Insulated Panel

Their time is now.

An Introduction Into A Technology That Is Transforming The Way Houses Are Built.

Structural Concrete Insulated Panels are a superior construction product. MetRockSCIP is the best of the SCIP products.

A House at **Crystal Beach, TX**

It Looks Like Its Neighbors

Even On The Inside

Then IKE Came To Visit 7

The House Next Door

The Structural Concrete Insulated Panel House Survived

with less damage than other surviving structures because of an engineered foundation & Code-Conforming Sandwich Panels.

It Survived,

even though another house rammed into it.

We have not identified any other house that survived such a collision.

Engineered Foundation

- Every builder should put an engineered foundation under every structure.
- A foundation is the interface between the earth and the structure.
- An engineered foundation is designed to respond to the forces that are acting at that interface.

Code-Conforming Sandwich Panels

- Called Structural Concrete Insulated Panels (SCIP)
- Engineered 3-dimensional wire structure
- Internally insulated with EPS
- Coated with a high recycle content stucco on both faces
- Structurally, it functions like reinforced concrete
- But insulates better than a fully-insulated stud wall

SCIP Before the Concrete Coating Was Added

Finished, It Looks Conventional

A History Lesson

SCIPs technology has been used in construction since the late 1960's.

Tens of thousands of structures have been built with SCIPs around the world.

No structural failures, even though the workmanship on some of the structures was very poor.

Has not caught on in the U.S.

SCIP Are:

- Concrete panels built without forms
  - Cheaper and quicker than formed concrete or tilt wall construction
- Used in residential, commercial, and industrial/ agricultural building
- Superior in construction attributes compared with:
  - conventional construction
  - other forms of panelization
  - Insulating Concrete Forms

The Competition

- The Competition can easily show how they can beat Stick Frame Construction hands down.
- SCIP can beat the competition.
- Here is some of the competition.

SIPs and Framed Panels

- Pre-fab panels are often OSB glued to EPS
- Insulating performance slightly better than conventional construction
- Problems
  - Cost and time to seal all joints
  - Seal failures with time
  - Mold potential
  - Termite potential
  - Weaker structurally

Insulated Concrete Forms

- Much better than stud construction, BUT…
- Thermal mass of concrete is not available because it is covered with EPS form.
- HVAC must cycle on and off regularly to maintain comfort.
- Inside must be coated with a fire-resistant material such as sheet rock.
- Mold and termites may use furring strips and the paper on sheet rock as a food source.

Domes

- Monolithic domes can be very energy efficient, and are very disaster resistant, but they do not look like 95% of the population thinks a home should look, so when you are ready to sell your home, there are not as many potential buyers.
- Geodesic domes are not usually as energy efficient and over time they develop leaks wherever a joint occurs, and there are hundreds of joints in a geodesic dome.

Straw and Earth Shelter Homes

- Both are energy efficient, the earth shelter homes do not look like conventional homes. If you have free labor, both can be economical solutions, but if you have to pay for the labor, these homes become expensive.

SCIP Construction Is the Obvious Choice Because:

- Looks Conventional
- Is Hazard-Resistant
- Is Sustainable
- Is Thermally-Efficient
- Is Quiet
- Is Economical

Conventional Looking

- SCIP homes look like conventional homes.

Aesthetic Design – Exterior

- Finish the walls with:
  - Any of the stucco finishes (most economical),
  - Stone or manufactured stone,
  - Brick or thin brick, or
  - A number of other options.
- The roof can be finished with barrel tile or any other conventional roof finish, or it can be exposed concrete.

Aesthetic Design – Interior

- Walls can be:
  - Painted over a finish or texture coat of stucco,
  - Plastered,
  - Paneled, or
  - Sheet rocked.
- Ceilings can be:
  - Painted,
  - Plastered, or
  - Suspended.
  - Faux beams can be added.

Hazard-Resistant

- Fire-resistant
- Termite-resistant
- Hurricane-resistant
- Tornado-resistant
- Earthquake-resistant
- Drive-by-shooting resistant
- Mold-resistant

Sustainable

- Very little wood in structure.
- Steel has high recycle content.
- Recycled polystyrene.
- Magna Wall FRS contains about 50% post industrial reclaimed material.
- Low maintenance costs.
- Low heating and cooling costs.
- If it is flooded, hose the inside and outside down and start redecorating.

Thermally-Efficient

- Little or no air movement through the walls or roof.
- 1” to 1.5” of stucco on inside walls provides thermal mass to moderate temperature fluctuations.
- Inside air temperature tends to mimic the ground temperature when built on a slab.
- Few breaks occur in the insulation, thus these walls can easily outperform a stud wall with R-40 insulation.
- More efficient than ICF because the thermal mass and insulation are in the right places.

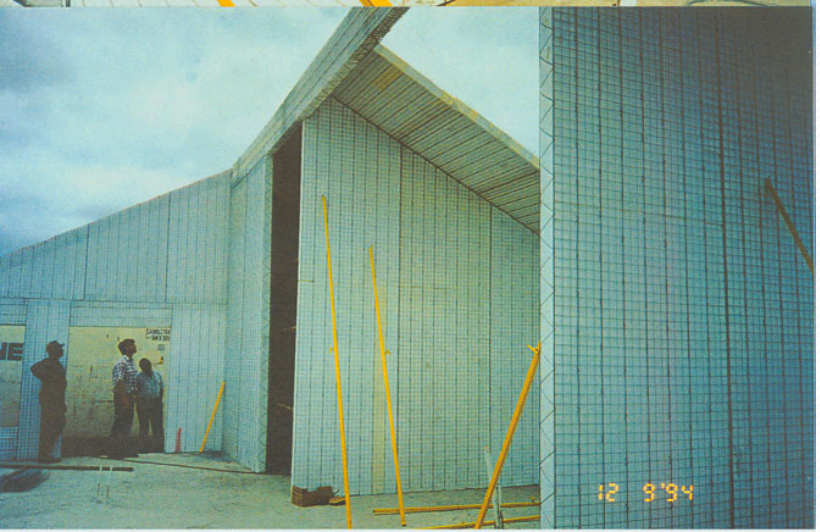
Quiet

- You need to be in a SCIP home to understand how quiet a home can be.

Fewer Subs

- After the footings are in, the same crew can erect the panels and spray them with stucco inside and out, and top and bottom.
- The crew needs to lay off for plumbing, HVAC, and electrical subs, but not framers, dry wallers, roofers, etc.; thus, construction moves faster.
- Less skilled labor is required.

SCIPS in Use



Easy Integration With Trades

- Plumbing
- Electrical
- Heating/Air Conditioning

Very Affordable

- With an experienced crew, construction costs are about the same as with conventional construction.
- Maintenance costs are much lower.
- Operating costs are much lower.
- Therefore, the lifecycle costs are much lower.

Structural Design

- Panels with different engineering characteristics can be constructed by varying:
  - The width of the trusses,
  - The weight of the trusses,
  - The spacing of the trusses, &
  - The thickness of cementitious plaster.

What Do You Need?

- Insulating Performance to R-40,
- Fire Rating from 60 min. to 4 hours,
- Pest-, mold-, termite-resistant,
- Impact-Resistant (hurricanes/tornado projectiles, bullets),
- Hurricane-Resistant to Category 5 (200+ mph winds),
- Tidal-Surge-Resistant,
- Earthquake-Resistant,
- Sound Co-efficient to STC 50+.

Earthquake Resistant

- Under ICBO, SCIP could be designed and used through Seismic Zone 4.
- With ICC and a new Seismic Design Categories, SCIP can be used in SDC A & B without further testing.
- Cyclical Racking Shear Testing must be completed before SCIP (as well as ICF, AAC, & masonry walls) can be used in other zones.
- ICC has not completed the development of the parameters for the test.

Challenges for SCIP

- Many building officials are not yet familiar with SCIP and need to be educated. Those that are, are enthusiastic about the product.
- Most contractors are not yet familiar with SCIP and need to be trained.
- Most home buyers are not yet familiar with SCIP and need to be educated.

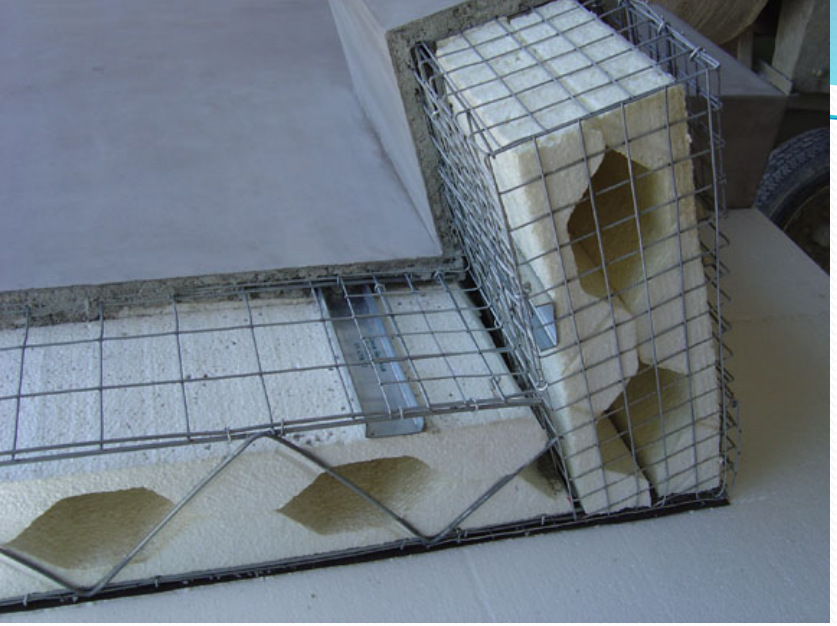
SCIP Is Not Limited

- Don’t be limited to little box like houses.
- Dream big.
-

Panels Blend with All Materials

High-Quality Custom Homes

Steel Frame & SCIP Apartment



Green Sandwich Technologies

Impac International

Spraying 3D Panels

MetRock

SCIP – The "Greenest" Building System

- Most thermally-efficient of the economical building systems.
- If tied to the earth's thermal fly wheel, houses can be essentially self-heated and self-cooled where the earth's upper-stable-isotherm is between 55 and 63 degrees F.
- HVAC units can be much smaller and will have longer "off-cycle" times. This means less power and longer-lasting units.

SCIP – The "Greenest" Building System

- Depending on the MFG, SCIPS can have a high recycle/reclaim content
  - 40% by weight and 60% by volume
  - Truss and mesh can be 40% recycled automobiles
  - Foam can be 70 - 100% re-grind
  - Concrete skin can be 40 - 50% reclaimed Class F coal fly ash

MetRock is the Best SCIP

- Other systems require the installation of expensive equipment, shipping panels from one location in the US, or bringing in containers from overseas.
- For your first MetRock structure, panels can be fabricated in a factory and shipped to the building site.
- A low-cost trailer mounted assembly table and press allow panels to be fabricated on the building site.
- As your business grows, a small factory can be installed to make panels close to the building sites.

MetRock is the Best SCIP

- If your client gives you a change order, you do not have to order a replacement panel(s) from Central American and wait for it to be shipped. You can replace the panel(s) on the site.

MetRock is the Best SCIP

- MetRock was developed by people who understand spraying cementitous coatings.
- MetRock has built in screed points so a precise thickness of coating can be applied.
- 1” mesh is used which holds the coating in place with less chance for sloughing off if over coated
- 1” mesh reduces the tendency of the coating to crack.

MetRock is the Best SCIP

- If you have a problem, you can pick up the phone and talk to someone who has experience with building MetRock Homes and who understands the process of applying a concrete coating to them, not to a person who has expertise running a factory.

Building With MetRock

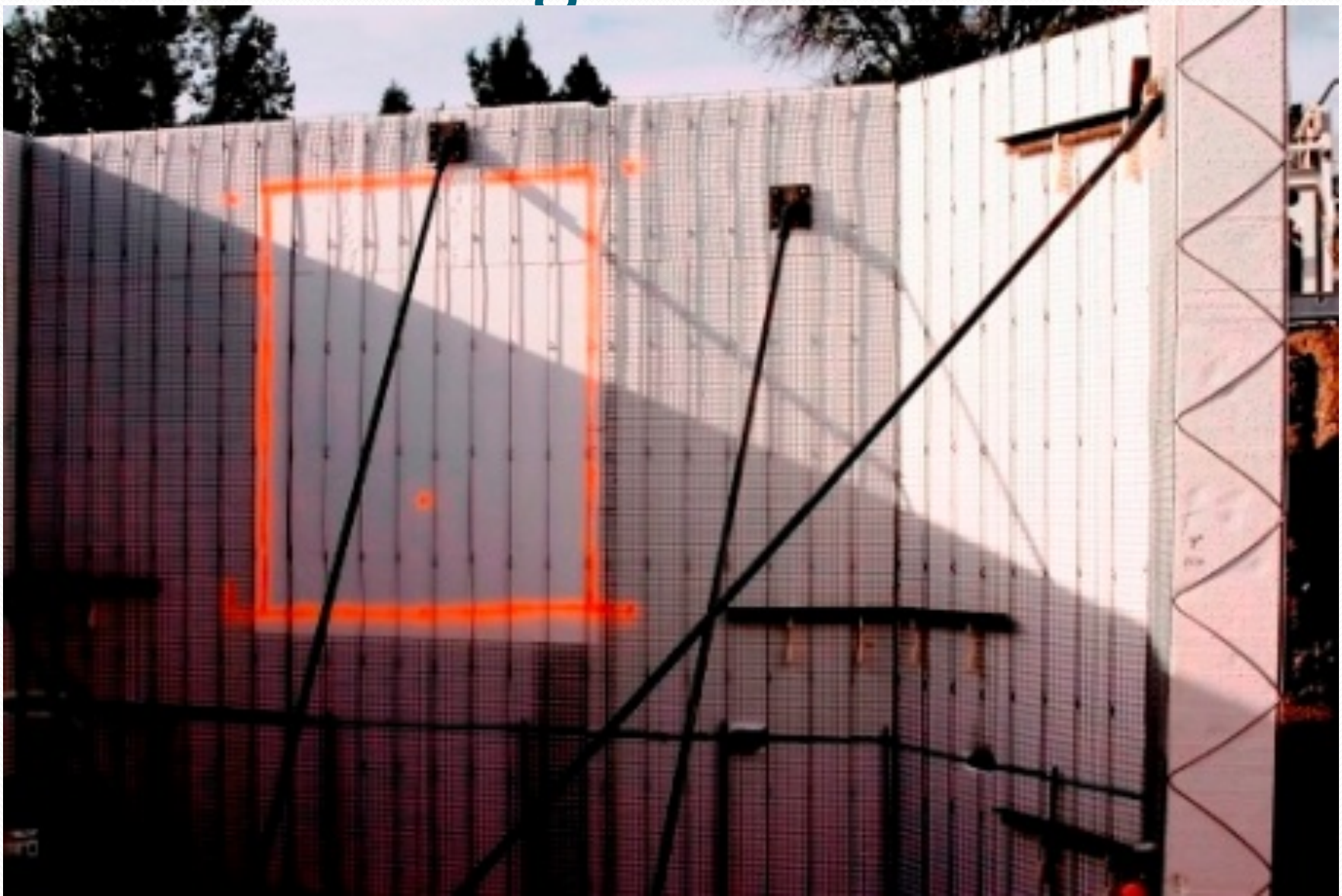
Footings Are In

Basement Walls Are Up & Braced

Electrical Is Let Into The EPS

First Floor Installed

Adding A Window



1st Floor Walls Go Up

Even Stairs

Stuccoing Exterior Basement Wall

Basement Walls Backfilled

Wall & Ceiling Partially Sprayed

& The House Is Finished

Even The Bathroom Looks Conventional

Summary of Advantages

- Greater insulation and structural integrity
- Less costly and time-consuming
  - Lumber prices are rising
  - Forests are depleted of trees for construction
  - May not necessitate heavy equipment
- Fewer labor hours to build a structure
- Changes made quickly and cheaply
- Extremely environmentally-friendly

For More Information, Contact

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Structural Concrete Insulated Panels

Their time is now.

Blastcrete Licensing Package

The Blastcrete licensed package provides you with the tools and equipment to allow you to successfully construct MetRock SCIP.

Blastcrete will customize your package to fit your level of production.

The package includes but is not limited to a portable jig press, hog ring guns, Blastcrete mixer/pump combination, press brake, and other required accessories.

Blastcrete Mixer Pumps

Blastcrete D3522 Mixer Pump

Blastcrete RMX5000

Blastcrete Mason Mate

Portable Jig Press

Portable Jig Press

- Capable of assembling panels in
  - 8’ to 18’ Length
  - 12” to 48” Width
  - 5” to 13” Thickness

Hog Ring Guns

Portable Press Brake