GLOBAL SIGMA TECH

TECHNICAL SPEC PRESENTATION

GLOBAL SIGMA TECH

WE MANUFACTURE HIGH EFFICIENCY CONSTRUCTION MATERIALS

We bridge the gap between energy efficiency Affordable, high quality, and quick build.

Global Sigma Tech proprietary technology is used to build residential, commercial, government, military and globally relevant structures without the use of cement, steel or wood. Enabling significant savings in costs, build time, and energy operation.

GLOBAL SIGMA TECH

SigmaCrete™ is a revolutionary building product that will transform modern architecture and construction. It is an innovative structural panel system that is both eco-friendly and cost effective.

Unmatched in its performance and specifications,SigmaCrete™ products offer a fast and effective way of construction for all types of buildings. This world class, construction value comes at an astonishingly affordable price. SigmaCrete™ is the future in visionary architecture and in a short time has created some serious buzz in the industry.

What is SigmaCrete™

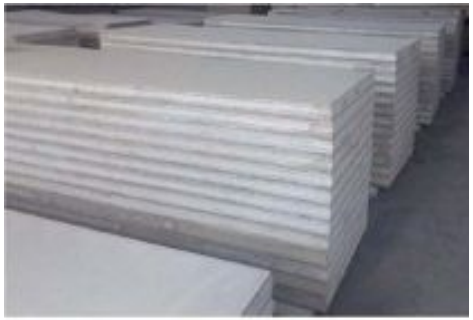
Is our exclusive product and is manufactured with our proprietary formulation, suitable for a wide range of general building uses and for applications that require fire resistance, mold and mildew control, sound control applications and many other benefits.

Applications

Low, Medium Density Residential Buildings, High Density Residential and Commercial, Senior Housing, Commercial Building, Schools, Medical, Emergency, Government, Latrines, Building Extensions, Remodeling, Fences and Small Retaining Walls and endless uses.

Technical Data & Test Results

SigmaCrete™ Products Technical Data, Test Results for Strength, Fire, Water, Weather, Certificates



SigmaCrete™ Advantages

SigmaCrete™ Products offer a number of advantages over other similar products in the market, we are heads and shoulders above the competition.

Exceptional Structural Load Bearing
The structure of the SigmaBoard™, Wall, Floor, Roof and Kit enables it to be used up two stories without the need of any additional structural frame. SigmaWall™ passed the strength test under extreme load conditions, its ultimate load is 35.000 Pounds, (15.000 Kilos).

Fire Rated
SigmaCrete™ Products are non-combustible and have excellent safety characteristics proven by laboratory fire safety tests. This building material is a safe choice for many types of construction.

High Thermal Resistance
SigmaCrete™ Products have a very high thermal transfer resistance, and does not need any additional insulation to achieve the required thermal insulation against external environments.

Acoustic Performance
SigmaCrete™ Products perform well acoustically and do not require insulation to achieve the required decibel levels of 50 for residential buildings. It has ability to isolate and stop the sound transfer making it an ideal material for shared walls between units.

More SigmaCrete™ Advantages

Waterproof
SigmaCrete™ Products are water resistant and laboratory tests have proven that it can be used in damp or wet areas such as bathrooms without the application of a separate water proofing membrane.

Light Weight
SigmaCrete™ Products are relatively lightweight and can be handled manually, eliminating the need to rely on cranes. The ease of handling this material on site makes the products very efficient and a cost effective way to build structures.

Non-Flammable
SigmaCrete™ Products are non-flammable, they don't catch fire. The tests conducted have shown when the products are subjected to live flames it did not catch fire or release any toxic gas. This reaffirms the safety SigmaCrete™ Products lends to structures.

Lifespan
The lifespan of SigmaCrete™ Products could last as long as 120 years, which surpasses all other construction materials so far.

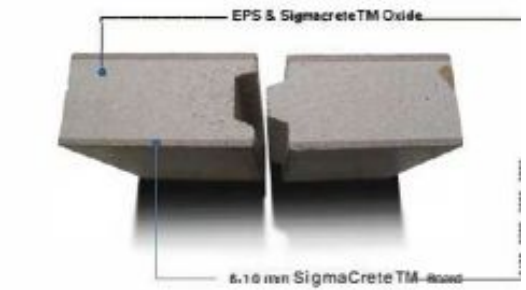
Reduced Construction Time
SigmaCrete™ Products requires less labor and can speed up construction time. Once the SigmaWalls™ are fixed into position it becomes a stabilizer, acting as a structural element as well as the wall envelope. This eliminates the need for internal timber frames, insulation, internal plaster lining, sisalation, external brickwork or cement rendering.

Differences between SigmaCrete™ and Bricks

The table below demonstrates the difference between the SigmaCrete™ construction vs. typical brick veneer construction. This clearly It explains the difference between the two construction systems illustrating how SigmaCrete™ construction is super efficient and saves you considerable time and money.

SigmaBoard™ and SigmaWalls™ are made out of SigmaCrete™ our proprietary formulation which is water resistant, lightweight and composed of two 6mm SigmaCrete™ oxide boards with patented composite infill. It is a mineral based,eco friendly, homogeneous building product. The board and core of the panel is magnesium sulfate based (patent pending) and offers superior bonding between the two.

The SigmaCrete Product comes in different widths and thickness for multi-purpose use. Its characteristics as well as ease of installation make it the ideal building material for the new generation.



Product	Thickness (mm)	Weight kg/m3	Width (feet)	Length (feet)	To use
Sigma Panel/50T	50	600	2'3'4'	6'8' 9'10'	Interior Exterior Wall and Floor
Sigma Panel/75T	75				
Sigma Panel/100T	100				

Construction Time Comparisons

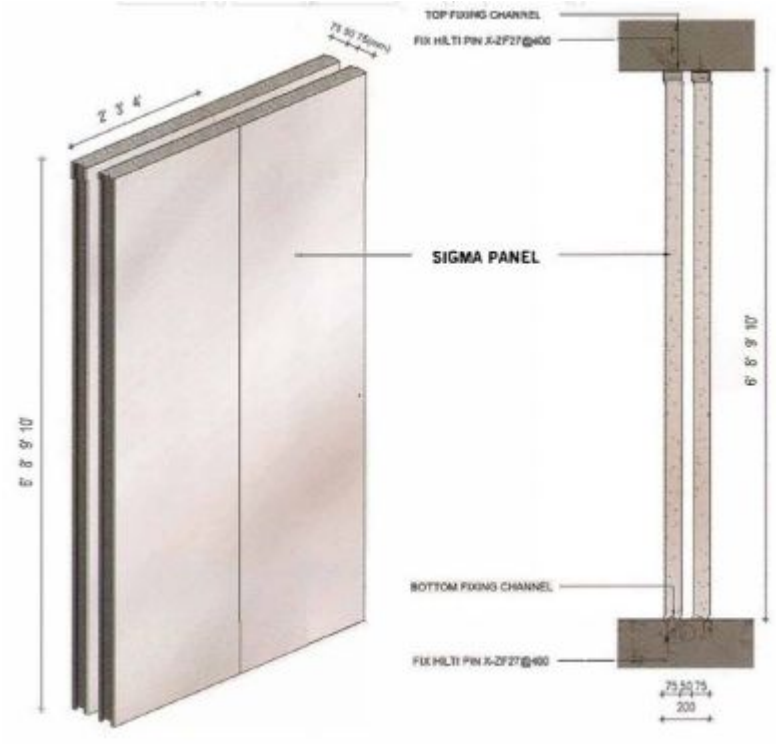
CONSTRUCTION TIME COMPARIONS			
SIGMA PANEL BUILDING SYSTEM (CRAEN ERECTER)		CONVENTIONAL BRICK VENEER CONSTRUCTION	
1.GROUND FLOOR SLAB	Same	1.GROUND FLOOR SLAB	same
2.GROUND FLOOR WALL PANELS	2 days	2.GROUND FLOOR FRAMING	2 days
3.FIRST FLOOR/FLOOR PANELS	1 day	3.FIRST LEVEL FLOOR FRAMING	2 days
4.FIRST FLOOR WALL PANELS	2 days	4. FIRST FLOOR FRAMING	3 days
5.INTERNAL LININGS	Same	5.ROOF CONSTRUCTION	same
6.ROOF CONSTRUCTION	Same	6.WALL SISALATION&INSULATION	2 days
		7.GROUND FLOOR BRICKWORK	8 days
		8.FIRST FLOOR BRICKWORK	10 days
		9.INTERNAL LININGS	same
TOTAL BUILDING TIME	5 days		27 days

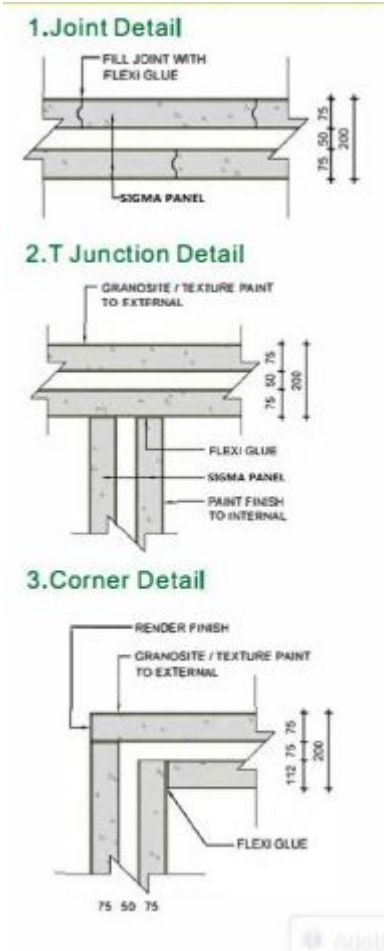
External or Shared Wall Usage

External or Party Wall

SigmaWalls™ can be used as external wall or shared wall between units. The panels are lifted into place and fixed at the top and bottom by metal tracks which are then bolted on to the elements above and below. The panels are joined together by tongue and groove profile in which the cement glue is applied to ensure permanent bonding.

It is recommend to use a double layer of the Sigma Panel of 75mm thickness for external and shared wall use. But one wall is strong enough for most projects.





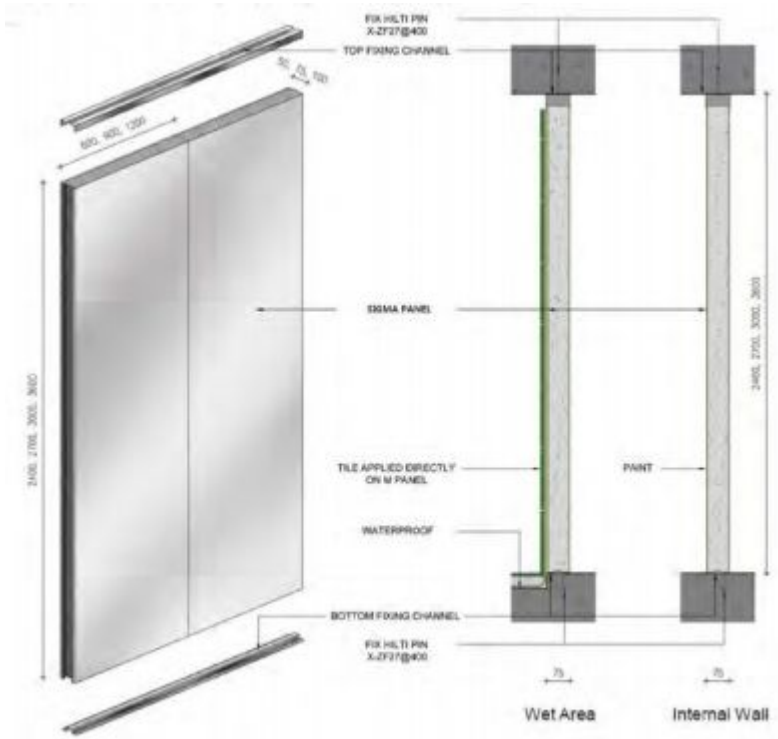
Internal Wall and Wet Areas

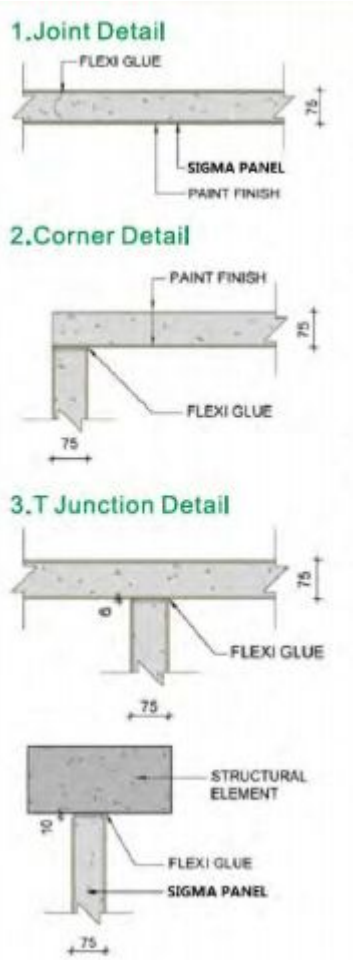
Internal Wall and Wet Areas

SigmaWall™ can be used as an internal wall between rooms including bathrooms. The water resistant nature of SigmaWall™ allows it to be used in damp or areas exposed to wetness.

When the panel is positioned and fixed to the top and bottom track. Cement glue is applied after waterproofing joints, then tiles can be directly applied onto panels.

Only a single layer of SigmaWall™ in either 50, 75,100mm thickness is required for this purpose.





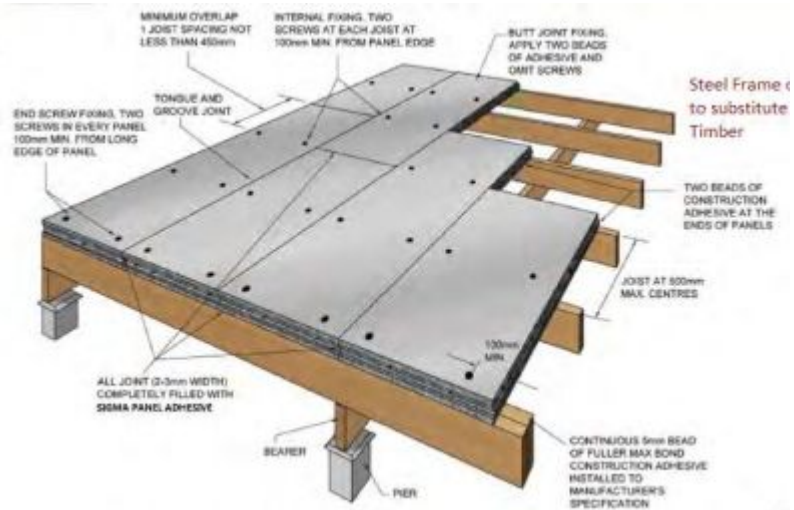
SigmaFloor™

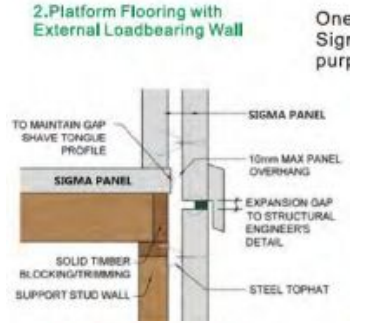
Flooring

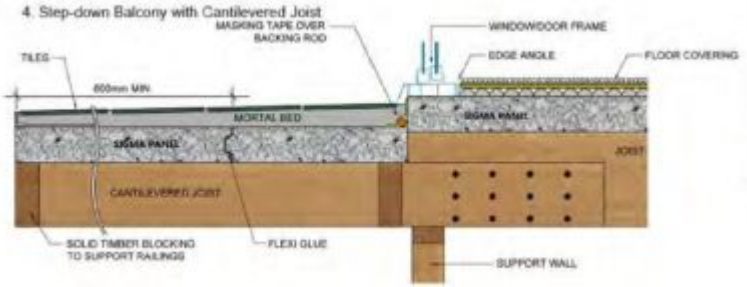
SigmaFloor™ is excellent to use instead of timber or concrete. The panels can be laid horizontally directly on a timber or steel floor joist supported on pier and footing.

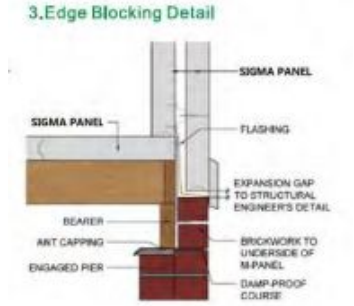
The tensile strength of SigmaFloor™ is a perfect flooring system, eliminating the need for beams for spanning.

This offers an efficient and cost effective alternative to concrete of or timber floors. One sheet of 100mm thick single layer SigmaFloor™ is sufficient for all flooring purposes.









Technical Data

	Both 50mm & 75mm Panels	Test Details
Fire propagation	Meets requirements	BS476 Part 6
Surface spread of flame	Class 1 Approved for use in areas where walls or partitions having a surface spread of flame rating of Class O or lower are required.	Bs476 Part 7 Building regulation
Smoke emission & toxic gas distillation	None recorded	
Combustibility	Deemed non-combustible	AS1530 Part 1
Water penetration	No evidence of water penetration	BS4315 Part 2
Strength & robustness Partition stiffness -Small hard body impact 6Nm -Small hard body impact 15Nm -Large soft body impact 40Nm & 12Nm -Door slamming -Crowd pressure 2Kn/m -Pullout 100N -Pulldown 250N -Heavyweight anchorage pulldown 3kN/m	 No cracking, detachment or loosening No cracking, breakage or indentation No cracking, breakage or indentation No surface or structural damage No visible cracks No damage Retained Retained Retained	Bs5234 Part 2
Anchor test -pullout test -shear test	4.36 kN 7.40 kN	Bs5080 Part 1 & 2
Standard panel length	8' 9' 10' 12'	
Panel width	2' 3' 4'	

Strength Tests

	50mm panel	75 mm panel	100 mm panel	Test Details
Fibre cement skin thickness	6mm	8mm	10mm	
Weight(Nom)	30kg/m²	45 kg/m²	60 kg/m²	
Axial load bearing	53kN/m	84 kN/m	115 kN/m	
Sound transmission(STC)	45dB	48 dB	52 dB	BS2750 Part 3 BS5821 Part 1 AS1191±STC Rating
Airborne sound transmission loss through panel	STC 38 dB	STC 45 dB	STC 52 dB	
Fire resistance(rating)	1 hour	1.5 hour	2 hours	BS476 Parts 20-22-1987
Thermal conductivity(K)	0.201 W/m²K	0.195 W/m²K	0.135 W/m²K	SGS
Thermal resistance	0.491m²K / W	0. 391m²K / W	0.291m²K / W	Wood & Grieve Engineers

SigmaCrete™ Test Results

FOUR POINT BENDING TESTS

The results of the four point bending tests on the structural SigmaWall™ product was to determine the load deflection relationship of the panels in out of plane bending and to provide experimental data to aid in designing the wall system. The average ultimate load was 5.993kN.

COMPRESSIVE STRENGTH TEST

The results of compressive strength tests on the structural SigmaWall™ panels was to determine the load deflection relationship of the panels in vertical compression and to provide experiential data to aid in designing the wall system. The average ultimate load for concentric load arrangement was 173.268 kN and the average ultimate load for face load applied through a typical pole arrangement was 18.606kN.

IN-PLANE SHEAR STRENGTH OF PANELS - RACKING TEST

The results of compressive strength tests on the structural SigmaWall™ panels was to determine the load deflection relationship of the panels in in-plane shear and tp provide experimental data to aid in designing the wall system. The average ultimate load for the double panel test was 20.160 kN and the average ultimate load for the single panel test was 8.435kN.

HURRICANE TESTING

Currently testing for hurricane environmental weather being provided by Hurricane Engineering Testing Inc. of Doral, Florida.

Building Process

MAKE FOUNDATION

MEASURE/SET LINE

PLACE SIGMAFLOOR

CUT TO SIZE

PLACE/ADJUST

SEAL USING FOAM

DRIVE STEEL BAR

ALLOW SPACE FOR DOORS AND WINDOWS

Building Process Continued

CREATE GABLE

HORIZONTAL PRESS

FINISHED WALL

HALF COMPLETED

WALL COMPLETED

NEXT SECTION COMPLETED

Building Process Continued

COMPLETED

PUTTY ANTI-CRACK TAPE

INSTALL ROOF

IRON ROOF

Building Process Continued

INSTALL DOOR FRAME/DOORS

INSTALL WINDOWS

INSTALL TILES

INSTALL INTERIOR ELEMENTS/PAINT/WALLPAPER

COMPLETED MODEL

Building Process Continued

INSTALL DOOR FRAME/DOORS

INSTALL WINDOWS

INSTALL TILES

INSTALL INTERIOR ELEMENTS/PAINT/WALLPAPER

COMPLETED MODEL

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