



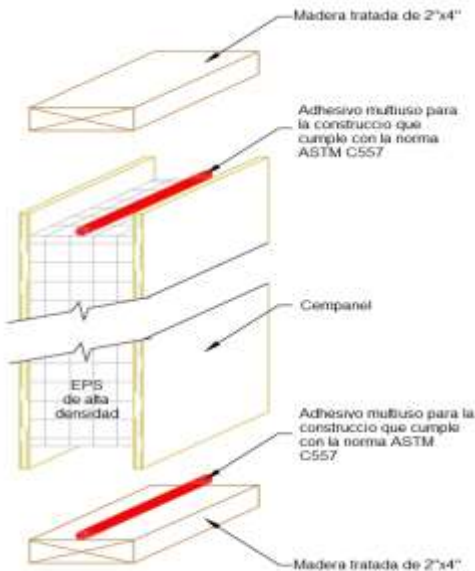
Duratherm Building Systems S.A. de C.V.

“Durathermsips^{MR}” Recommendations to assemble Structural Insulated Walls and Roofs

The “Durathermsips^{MR}” system is based on assemble Structural Insulated Panel walls, roofs and floors, made of fiber cement panels attached to both sides of an expanded polystyrene (EPS) core, it has a specific density, attached to the panels with glue, both; the panels and the core, make a monolithic piece, high temperature and acoustic insulating with structural capacity.



“Durathermsips^{MR}” requires many assemble materials which give support to build walls, roofs and floors to have a better assembly in the construction having a structure of strong construction.



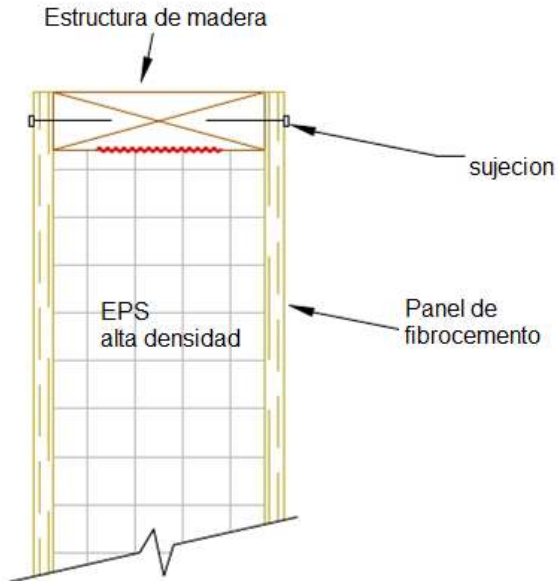
All walls, roofs and floors are attached to structural elements such as treated wood bars where the Heavy Duty Sips Glue (Beat the Nail DAP) is applied .

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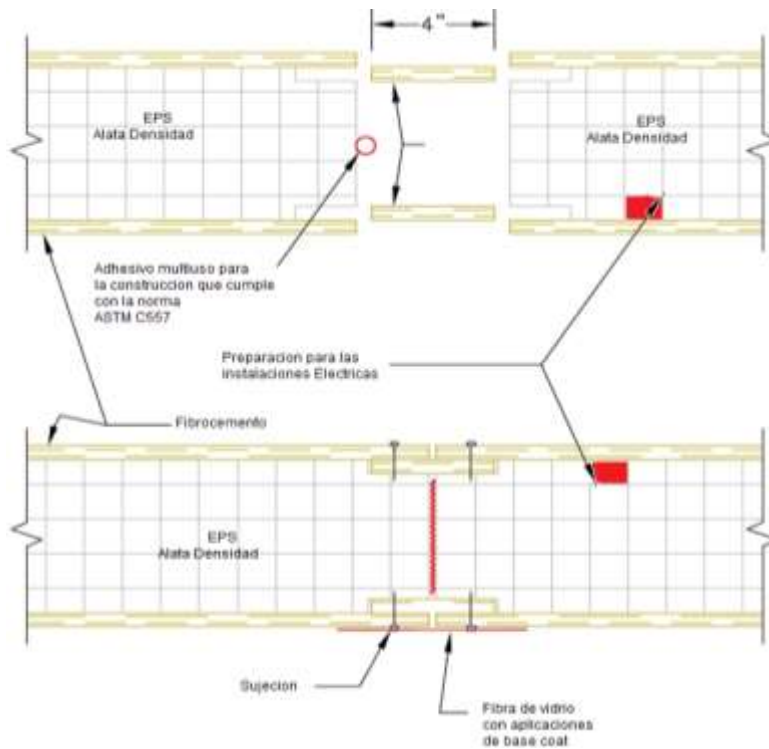
Treated wood dimension bars are 2" x 4", long, this wood comes from coniferous forest, wood bars are treated with water, copper and biocide that protects from many kinds of fungus and termites; the treatment also prevents the decomposition and deteriorations of the wood.

This kind of wood uses "micronized" copper particles to join in a permanent way the cells of the wood, it does make less corrosion in the fasteners (screws) and it makes a light and fresh post treatment appearance then alkaline copper quaternary.

To finish the assemble of walls or roofs, are used galvanized steel screws or fasteners for wood or steel of 1¼" with countersink every 25 cm.



Fasting the elements such as bars, strips to walls and fiber fragments.



structural treated wood assemble cement

The following are **the Nominal dimensions** of Durathermsips^{MR} panels used to build walls, roofs and floors:

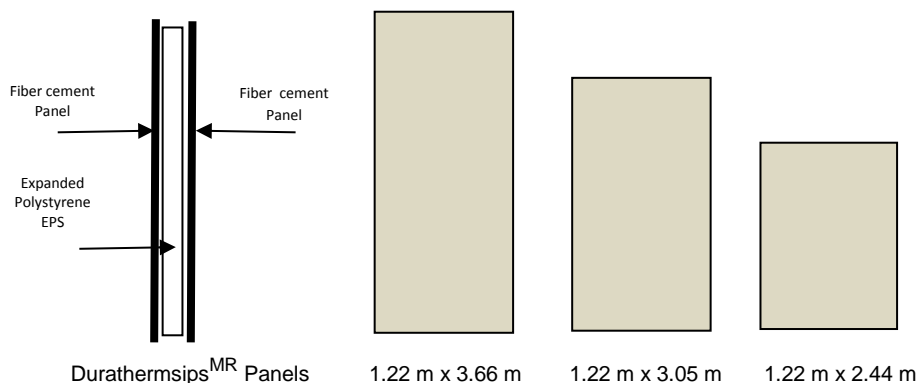
Panels for Structural Insolated Walls "Durathermsips"				
Length (m)	Height (m)	Width (cm)	m ²	Weight (Kg)
1.22	2.44	10	2.98	71.04
	3.05	10	3.72	88.8
	3.66	10	4.47	106

Peso nominal a partir de 25.8 Kg/m lineal de panel, equivalente a 21.16 Kg/m²

Panels for Structural INsolated Roofs and Floors "Durathermsips"				
Length (m)	Height (m)	Width (cm)	m ²	Weight (Kg)
1.22	2.44	15	2.98	74.06
	3.05	15	3.72	92.58
	3.66	15	4.47	110.51

Peso nominal a partir de 39.34 Kg/m lineal de panel, equivalente a 32.25 Kg/m²

Modulating room with dimensions of multiples of 1.22 m helps to reduce waste materials, which is possible to reuse whole pieces instead of using parts; it does avoid to have waste materials, unless it is a combination to complete gaps in windows and doors.



"Durathermsips^{MR}" Modulating room depends on the project and generally from outside dimensions of the building, door and window gaps, panels for walls, roofs and floors; taking care

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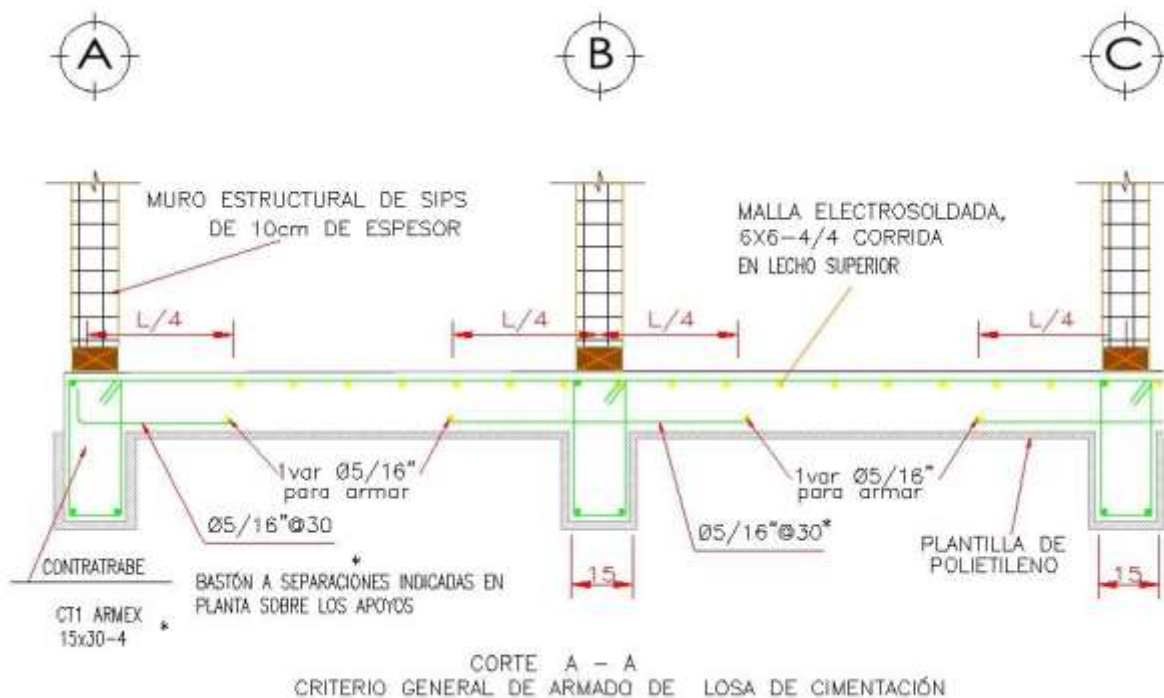
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of the standardization, compliance of local construction rules, security, cost optimization, architectural solutions and easy handling.

Foundation

For foundation, it is recommended a foundation floor according to the project and structural calculation according to the place, weights, uses and geometry project. Considering the F_c characteristic of resistance and positions of steel shown in the project.



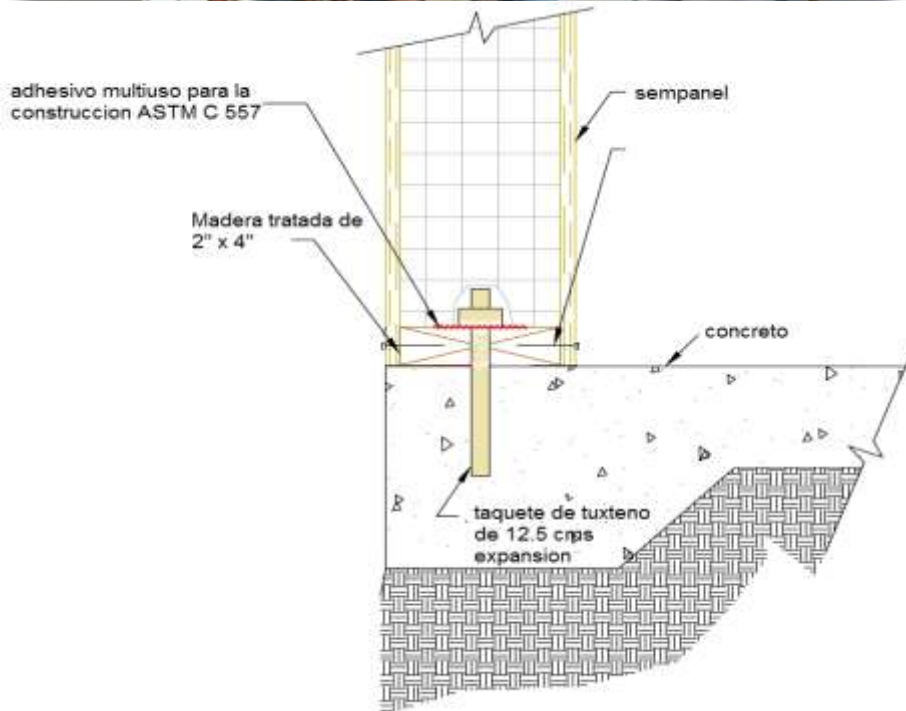
Foundation floor must be perfectly leveled which will help to have a better assemble of walls and efficient roofs; letting a correctly leveling.

DurathermSIP walls and roofs weight approximately just 10% of traditional system construction (weight block depends on the manufacturer).



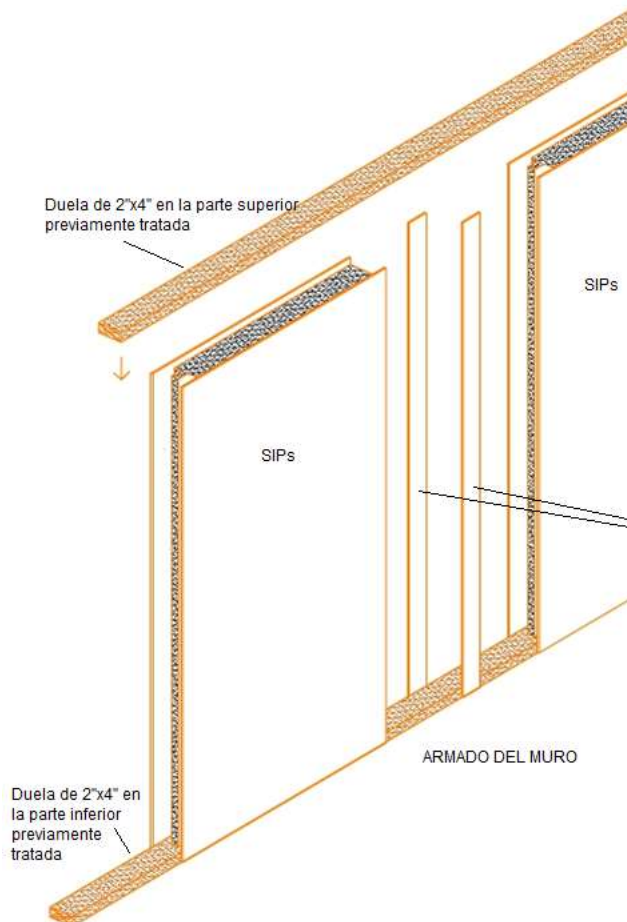
Concrete Foundation

Draw the total perimeter of walls on the foundation floor to set up the wood with a **drill**, drilling every 60 cm, applying in each piece of wood a bead of Heavy Duty Nail Beat the DAP (ASTM C5557). Install the anchors or fasteners of 3/8x5 " on the treated wood of 2" x 4".



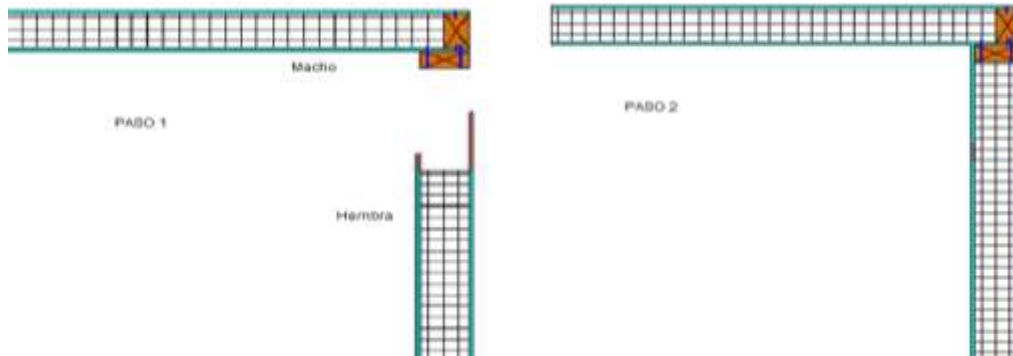
Assemble straight walls

Set up a treated wood bar of 2" x 4" to assemble structural insulated walls, in the same way walls are assembled, as joining two structural insulated panels, a straight wall **slices** strips of fiber cement of 7.5 cm with Heavy Duty Sips Glue Beat the Nail DAP (ASTM C557), walls are screwed with steel galvanized fasteners of 1¼" every 25 cm of both sides of the walls, as it might be seen in the following figure called "Armado de Muro".



Walls in corners, “Male” and “Female” walls

“Male” wall gets the treated wood bars of 2”x4”, where the Heavy Duty Sips Glue Beat the Nail DAP (ASTM C5557) is applied, “male” is set with wood anchors of 3” or 4” on the side of the panel. “Female” wall is set on the treated wood bar, set on the foundation floors, inserting it in the “male” wall, **plomeo**, leveling, assemble are verified and it is set conventionally to all sides of the walls.

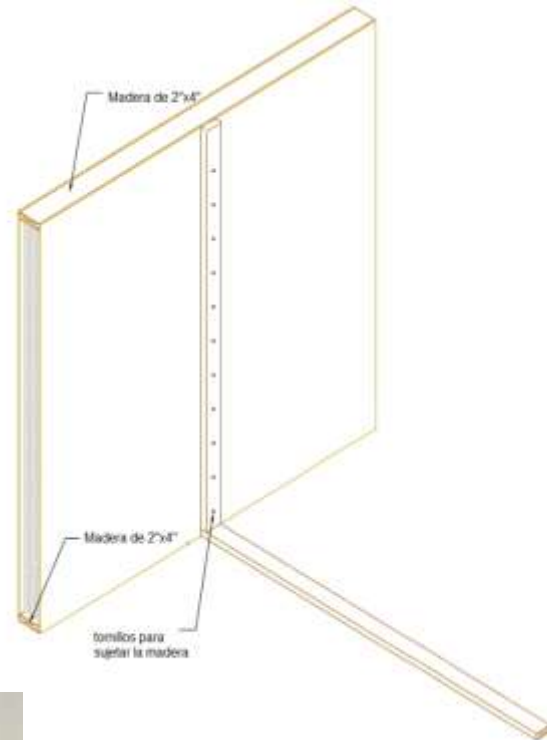


Setting “male” wall
Setting “female” wall



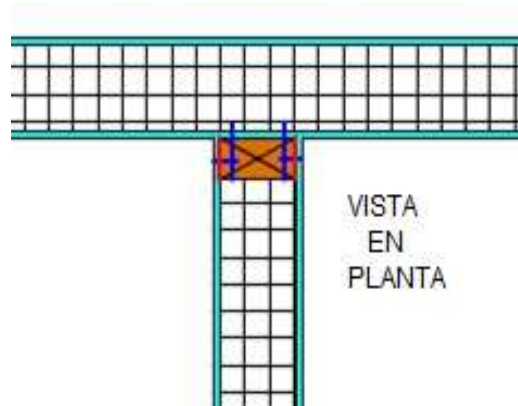


Once corners are assembled and leveled, they are fastened with galvanized fasteners of 1¼" every 25 cm to length, height and lowest part of the width of the fiber cement assembly.



Intermediate walls are set using the same technique of construction, low part of the wall goes on the treated wood bars of 2" x 4" which is joined to the foundation floor and the side of this structural insulated panel is assembled to the wall, where a treated wood of 2" x 4" was set along the wall; where the Heavy Duty Sips Glue (Beat the Nail DAP) was applied previously, fastening with conventional wood with 2 fasteners of 3" or 4" every 45 cm to join this wall to the straight wall, as shown in next figure.





Floor Slabs and Roof (DBS)

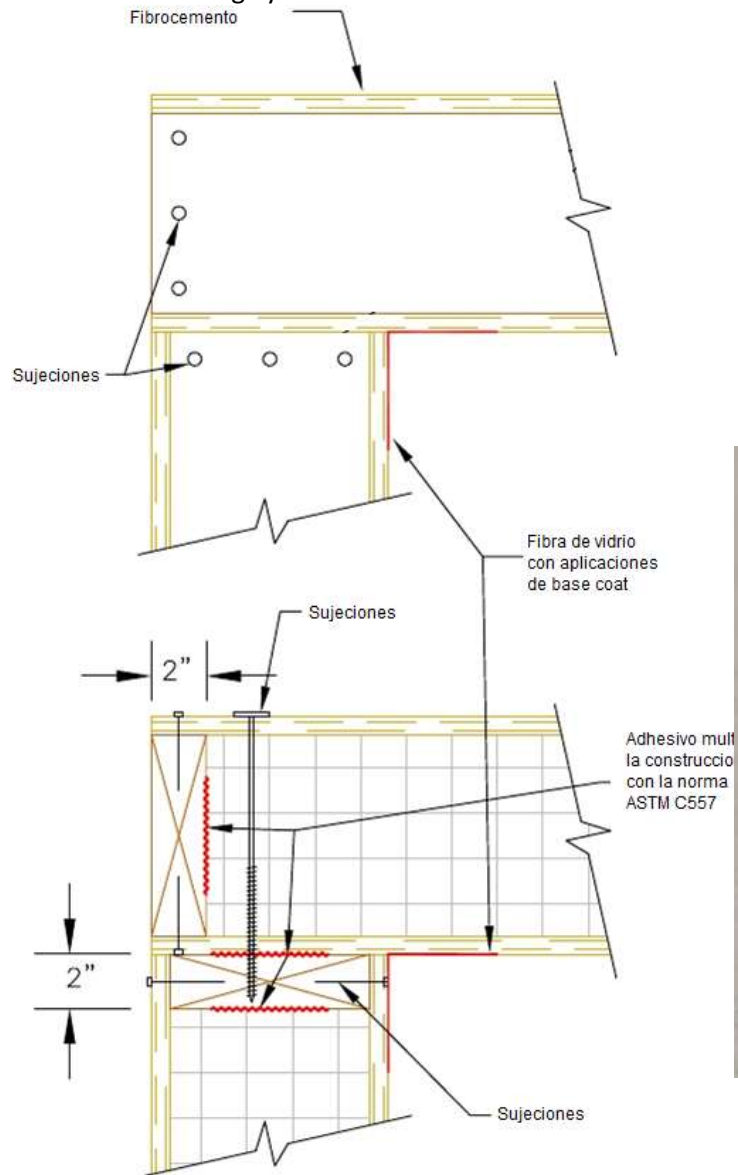
For structural insulated 15 cm
of its dimensions.

On top of the walls there is wood, steel or fiber cement laminated profiles of 2" x 4" which have adhesive cement multipurpose to instal structural insulated floor, the floor and the slab wall are screwed with a SIPs screw.

In of 7" or 8", assembling appropriately a structure of strong construction, this kind of screws must be screwed at least every 60 cm in each slab, it means; the corners and the middle of the slab, notes will be included in the project of construction and it will be always supervised by the Foreman.

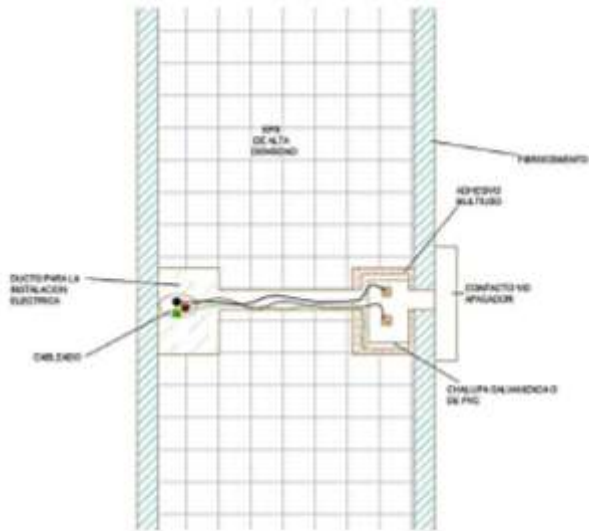
floor slabs in any

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Electrical system

Each Durathermsips^{MR} for wall, roof and floor has a conduit along it and two in its width to facilitate electrician preparations.



Hydraulic sanitary preparations must be installed during the preparation of foundation construction or considering of these preparations according to the needs of the project of construction, it is possible to connect them inside of the walls or through hydraulic service closet because of the material characteristics.

Roofs and floors must be secured with fasteners of 7" or 8" which are made specifically to join SIPs; and making appropriately a structure of strong construction.

Each piece for walls, roofs and floors has a conduit along it and two in its width to facilitate electrician preparations.

