STRUCTURAL WALL WITH A STRUCTURE EXOGENOUS TO THE LONGITUDINAL AXIS THEREOF FOR ENABLING THE INSIDE OF THE WALL TO BE FILLED ON SITE

DESCRIPTIVE MEMORY The present invention relates to a structural wall with cross-linked elements, external or not to the longitudinal axis of the wall, which allows the pouring of its interior filling during work. This is applicable to a large number of variants, thicknesses and materials. The use of the present invention allows to industrialize the placement of fillings, on site, to walls that previously could not be filled due to the internal structural elements.

STATE OF THE TECHNIQUE

The construction systems of walls and partitions of wood, metal or other material, which have pillars or other vertical strucutral elements, diagonal stiffeners, sill plates and transversals or blockings on the same axis, are widely known. Usually, some filler (expanded polystyrene, glass wool, polyurethane foam or other materials) is placed between this framework to provide insulation, prior to closing or covering one of the faces of the wall.

Among the known walls within the industry that have some similarity with the wall of this invention presented, there is one called document US 2004237425 (Worrell, Szerdi) of the year 2004, which has great complexity and variety of constructive elements, whose interior is subsequently filled in to the placement of stiffening diagonals, side meshes, insulation on both sides and horizontal reinforcement bars. The fundamental differences between this invention and the wall of American invention of the year 2004, lie in the fact that the wall of this invention does have inner pillars or structural vertical elements, which are essential for transmitting the loads to the base of the wall and to be able to fix its covering, and it can also be built in thicknesses much lower than those mentioned in the Worrell patent, (at least 40 centimeters). Furthermore, the wall of the present invention is prefabricated, which clearly does not occur with the wall of Worrell's invention.

Another document**, CL1416-92**, of the abandoned patent application of 1992, discloses a self-supporting panel (not a supporting wall) to be placed on a base, which does not have pillars (we are refering to boards that reinforce the panel in the middle) or stiffeing diagonals or blockings, but it does not mention the way it is structured, and it gives the mission of structuring it to a layer of expanded polystyrene and its coating of metallic mesh, and subsequent stucco. Clearly there are notorious and important differences between this invention of a self-supporting panel and the following: A structural wall capable of receiving loads. It is important to note that the differences are not only of materials

CLAIMS

1. A structural wall having a structure that permits pouring of an interior filling on site, the structural wall having internal stiffening structural elements comprising pillars, diagonals, transversal blockings and sill plates, which are cross-linked and / or have an external structuring to its longitudinal axis; the sill plates (5) and traversal blockings (6) nailed horizontally and externally on both sides of the structural wall, the sill plates (5) comprising a bottom sill plate located on level with an on-foundation (4) and a top sill plate located close to the end or top of the pillars (3), the traversal blockings (6) comprising at least a pair of transversal blockings (6) located between the top sill plate and bottom sill plate, the diagonals nailed diagonally and externally relative to the pillar to at least two selected from a group consisting of: the sill plates (5), the transversal blockings (6) and supplements, wherein the supplements are fixed vertically to the pillars.

2. The structural wall according to claim 1, characterised in that the pillars (3) have single, double or multiple right feet cross-linked on the same transversal axis of the wall; the diagonals (8) are multi-element or single cross-linked and separated from each other to allow the distribution of a filling (11) inside the wall.

3. The structural wall according to claim 1, wherein the pillars (3), the sill plates (5), and the transversal blockings (6), allow the on-site pouring of the interior wall filling material (11); and the structural wall further comprises a diagonal structural sheathing (12) composed of a material selected from a group consisting of wood, or metal plate; an interior filling (11) composed of mud and straw; and an outer base (14) of fiber cement or other moisture resistant material that encloses the on-foundation.

4. The structural wall according to claim 1, characterised by having reticulated pillars constituted by unique elements, or grooved or perforated sheets (3), continuous formed by folded plates and with possible reinforcements (18) or individual lattices, which allow the free passage of a filling (11) inside the wall; because it has a stuffed clay filling without or with additives, depending on the specific needs and that is applied or poured in the field manually, mechanically or with machinery; because its inner and / or outer lining, at its base and at its crowning, has small holes that allow the excess water to escape from the filling (11); because at its base and at its upper end it has a reinforcement or bending, (18) (18b) at the anchor point to the pavement and at the support site of the bearer and / or higher loads.

5. The structural wall according to claims 1, 2, 3 and 4, characterised by an internal structure which is reticulated and partially external to the longitudinal axis of the wall, allowing the on-site pouring of its interior filling.

6. The structural wall according to claims 1 and 2, characterised in that a lower horizontal structuring element –sill plate– (5), which is located externally to the plane of the pillars and above the level of affectation of moisture, to prevent its putrefaction.

7. The structural wall according to claim 1, 2, 3, 4, and 5, characterised in that it is prefabricated and its filling poured on site.

8. The structural wall according to claims 4, 5 and 7, characterised by being of the mechano, foldable, modulable and stackable type (21).

9. The structural wall according to claims 1 or 8, characterised in that it is further constituted by folding modules (21), composed of parallel vertical structural walls, joined with an articulated rod or a diagonal stiffener (20), that allow folding and unfolding, keeping both planes parallel.

10. The structural wall according to claims 1 or 8, characterised in that it is composed of folded sheet elements (12) which, by themselves, form pillars, diagonals, tensioners and cladding of both vertical structural walls.

11. The structural wall according to claims 1 or 8, characterised in that it is constituted by folding modules (21) and being composed of stackable, mechano-type, rigid structural sidewalls, joined with articulated rods (20) that allow folding and unfolding and also define the final wall thickness